THE FARMERS' CABINET,

AND

AMERICAN HERD-BOOK.

DEVOTED TO

AGRICULTURE, HORTICULTURE, AND RURAL AND DOMESTIC AFFAIRS.

Perfect Agriculture is the true foundation of all trade and industry.—LIEBIG.

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BY JOSIAH TATUM,

EDITOR AND PROPRIETOR,

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On the Manuring and Steeping of Seeds.

CONCLUDED FROM LAST NO.

Another German pamphlet on this subject has lately appeared from the pen of a Mr. Vietor, an apothecary at Neiderholm, in Hesse Darmstadt, under the title of "*The Manuring of Seeds, or a Simple and Cheap Cultivation of the Soil by the Artificial Manuring of Seeds, by which, at the same time, the Rust and other Diseases of the Corn Crops are Prevented, practically tried for five years, and proved on a large scale.*" By C. L. VIETOR. This author describes his methods, and is so far more worthy of the attention of the practical man. Before detailing these methods, however, I shall insert a few of his preliminary observations.

As the principle upon which the manuring of the seeds ought to be preferred to that of the soil, he remarks "that the manure can never be so equally distributed through the soil that the due proportion of food shall be given to each seed or plant; and that, besides, before the plant comes to require it, much of the organic matter of the manure has become decomposed and lost, and that even the inorganic matter is liable to assume forms of combination, in which it can with difficulty be made available to the nourishment of the growing plant."

These disadvantages, he says, may be avoided by manuring the seeds themselves which we wish to grow, while, at the same time, the following advantages will attend the adoption of this method:—

"1°. The same crop may be repeated on the same soil, though already exhausted, or even in any usually unfruitful soil.

"2°. We can manure the seeds with those special substances only which it is not likely to find in the soil, or of which it has been exhausted by previous crops."

This is an advantage which is possessed by all saline and mineral manures, and is one of those benefits which will appear more clearly and strikingly to the practical man as he becomes more familiar with the natural wants of the crops he wishes to raise, and with the kind of substances which are present in his soils and in the manures —such as farm-yard manure—which he usually employs in preparing them for the seed.

"3°. As the rotation of crops is rendered necessary chiefly by the abstraction of saline substances from the soil, it may be rendered unnecessary by adding again these sub-

stances, in such a way as to be within the reach of the seeds only. Thus, by steeping the seeds in sal ammoniac, and drying them with flour, the deficiency of salts may be supplied.

"4°. The rust and other diseases of corn plants are owing either to an excess or to a deficiency of food in the soil. These extremes can be best avoided by manuring the seed itself with the proper materials and in the proper degree. Thus," he says, "in a field of wheat after oats, upon a poor soil, a portion of the seed, which had been prepared with sal ammoniac, gave only a light crop, while another portion, prepared with oil also, gave a crop twice as heavy."

Influenced by the considerations above stated, some of which may, to a certain extent, be regarded as questionable, Vietor has been induced to try the manuring of the seeds before they are sown, and, from the success which has attended his results, to recommend it to others. The substances he employs, and his mode of using them, are as follow:

Substances employed.—1°. *Blood*, in the liquid state, is mixed with one-eightieth of its weight of glauber salts, dissolved in a little water; when thus mixed, it may be kept for a long time in a cool place without congealing or undergoing decomposition; or clotted blood may be dried either alone or mixed with a little earth or powdered clay, and then reduced to fine powder.

2°. Wool, hair, parings of leather, horns, hoofs, and bones, are charred in close vessels, until they are capable of being reduced to powder.

3°. The dung of all animals is dried and reduced to powder.

4°. Fats and oils of all kinds are mixed with so much earth, clay, or rye-meal, as will enable the whole to be reduced to powder. Oil-cakes are also powdered for use.

Mode of using them.—He makes up a semi-fluid mixture with which he mixes the seeds, and then he dries up the whole by the addition of the powdered manures already prepared. His semi-fluid mixture is thus prepared:—For a bushel of wheat or other grain, take

20 to 30 lbs. of clay in fine powder.

1¼ lbs. of pounded sal ammoniac, or 3 lbs. of common salt.

3 to 5 quarts of whale, rape, or other cheap oil.

15 to 20 quarts of fresh blood, or blood, kept in a fluid state by means of glauber salts, or, in the absence of blood as much water.

3 to 5 lbs. of linseed meal or pounded oil-cake.

These are mixed together intimately, and water added, if necessary to make a half-fluid mass. The seed is then to be poured in and stirred about till every seed is completely enveloped by the mixture. A layer of one of the following dry mixtures is then spread on the floor, over it the manured seed, and then another layer of the dry powder. The whole is then stirred together and left to dry.

Dry Mixtures.—Of these drying mixtures he describes several, consisting chiefly of powdered clay, mixed with one or other of the dry powders already mentioned. Thus he recommends mixtures of

1. 75 of powdered clay, 8 horn shavings, and 17 of bone dust.

2. 85 of clay, with 15 of fluid, or 5 of dried blood.

3. 85 of clay, 5 of charred hair, and 10 of oil-cake.

4. 60 of clay and 40 of powdered dung.

5. 70 of clay, 25 of charred leather, and 5 of bone dust.

6. 80 of clay, 1 of fat, tallow, or oil, and 2 of powdered dung.

These are all to be finely powdered and intimately mixed. The principal alleged use of the clay is, to make the other substances cohere together, and to attach them more strongly to the grain.

When the mixture of grain and manure is dry, it is broken up with the hand and thrown upon a fine sieve, which allows the loose powder to pass through and the uncovered grains, and then upon a coarser sieve, through which the dressed seeds pass, leaving the lumps, in which two or three seeds may be present, and which are to be carefully broken up. He prescribes further, that much caution is to be used in completing the operation so quickly that the grain may not be permitted to sprout, and thus become liable to injury during the succeeding operations.

When it is wished to grow corn after corn in fields manured in the usual way, Vietor recommends mixing, for each bushel of seed, two to three pounds of sal ammoniac, or four to six pounds of common salt with ten to fifteen of rye-meal, adding a little water, stirring the seed well among it, and drying the whole in a stove.

Such is the substance of Vietor's pamphlet and observations. I have stated them pretty fully, because I think he deserves this much at the hands of those who are interested in the progress of practical agriculture; because he has stated the reasons for his procedure, has described his processes fully, and claims neither great merit nor great reward for alleged great discovery.

Besides, there is a show of reason in what he states. For though we may very fairly doubt, or perhaps entirely disbelieve, that the quantity of manure with which he envelopes his seeds, can be sufficient to supply the wants of the crop that is to spring from them, yet there can scarcely be a more economical way of employing the same quantity of manure—one in which there will be less waste of it, or in which it will be more useful to the growing plant. In every way of applying manure to the soil which has hitherto been adopted, a large portion never reaches the roots of the plants. Even when drilled in along with or near the seeds, a notable quantity escapes from the neighbourhood of the roots, and is more or less completely lost to the crop it is intended to feed. Such must obviously be the case to a very much smaller extent where it is in actual contact with the seed it is to nourish, and actually envelopes it.

Still it is doubtful whether the gain or saving effected by this method, will be equal to the cost of time and labour which it involves. Should such a mode of manuring be found easily practicable, more skilful mixtures than those of Vietor—such as would be more certain to succeed, and such as would be fitted especially to aid the growth of this or that kind of crop—could easily be suggested.

In illustration of this opinion, I will here briefly state the facts from which I am led to believe that considerable benefit may in reality hereafter accrue to practical agriculture, from a careful study of the effect of certain known steeps or prepared mixtures upon the after growth of the seeds upon which they have been tried.

1°. The quantity of inorganic matter contained in the grain of wheat, oats, barley, &c., is comparatively small. In wheat and barley it varies from 1½ to 2 per cent. of the whole weight; in oats it is about 3½ per cent., but a considerable proportion of this is contained in the husk with which the oat is usually invested. But, though small in quantity, this inorganic matter is absolutely essential to the perfect condition of the seed, and to the healthy growth of the plant that springs from it.

2°. When seeds are steeped in water, they swell and increase in bulk. They absorb a portion of the water and of any saline substances it may hold in solution. Now, if the small quantity of saline or inorganic matter which exists in seeds does really promote their growth, may not a larger quantity promote it more? May not the growth be more luxuriant if the seed be steeped in water containing saline substances in solution, and be thus made to absorb an additional proportion? It does not appear unreasonable to suppose that a bushel and a half of seed-wheat may be made to absorb a pound of saline matter. This appears, indeed, to be only a very small quantity, and yet, if absorbed, it would add one half more to that which the seed naturally contains. We cannot pronounce beforehand, with absolute certainty, that by this absorption the growth of the seed would be greatly promoted, though both theory and practice concur in rendering it probable. Thus the experiments of Bickes—whose mode of preparing seeds appears to be a simple steeping in saline solutions—appear decisive in favour of the opinion that such artificial additions to the saline matter of the seed do really, in some cases at least, greatly promote the growth of the seeds, and increase the luxuriance and produce of the after crops.

The fact that saline manures are beneficial, in many cases, to the growing crop, when merely applied to the soil, is in favour of the same view. The salts, it is true, when applied to the soil, enter the plant by its roots; but, nevertheless, their action is simply to yield saline matter to the plant in larger quantity than it could otherwise readily obtain it from the soil. This additional supply might at once be given it, to a certain extent, by steeping the seed itself.

3°. Further, we know that some seeds germinate much more rapidly and certainly than others. We know, also, that the proportion of inorganic matter, or of ash they leave when burned, varies in different samples of seeds of the same kind. That contained by wheat, for example, is sometimes 1½, sometimes 1¾, and sometimes nearly two per cent. of its weight. Can this difference in the growth of seed and the difference in the proportion of saline matter, have any connection with each other? Do some germinate feebly, do others fail entirely, because they contain too small a proportion of the usual saline constituents of the seed? Would they germinate better if more were by some means given to the seed? The same experiments of Bickes, upon the effect of steeping, seem almost to answer these questions in the affirmative; they, at least, render it very probable that some such relation does exist between the two differences to which I have alluded. The same may also be said of the observation made by Mr. Fleming, of Barochan, that seed wheat, which had been dressed the previous year, with certain saline substances, grew more luxuriantly, and gave a better crop than that which, though grown on the same field, had not been so

top-dressed. It is not very unreasonable to suppose that this better growth of the dressed seed might be owing to its having obtained, from the substances applied to the soil, a larger proportion of saline matter than that to which no top-dressing had been applied.

Still these circumstances only render probable the opinion to which I have adverted. They point out, however, new series of researches, both in the field and in the laboratory, by which the opinion will be tested, and either refuted or confirmed. In the field, experiments must be made with different seeds, dressed and undressed. In the laboratory these seeds must be examined, the proportion of inorganic matter they respectively contain determined, and if this inorganic matter be equal in quantity in seeds exhibiting different powers of germination and growth, the difference in the kind or quality, as well as in the quantity of the ash, must be more or less rigorously ascertained. By these united methods of investigation, we may hope, by and by, to make out what are likely to be the real and constant effects of steeping upon seeds—to what kind of seeds or roots it may be applied most beneficially—under what circumstances this treatment ought to be especially adopted—what kind of saline substances ought to be applied to each species of seed, and in what proportions—and what is the nature of the influence they may be found to exercise in promoting or otherwise modifying the growth of the after crop.

In the mean time, there are two principles by which our trial of steeps ought to be regulated, by which the saline substances we may employ with advantage in our first experiments in the field and upon different crops are distinctly pointed out. In a future paper I shall explain these principles, and state the practical suggestions which may be drawn from them in regard to experiments upon the steeping of roots and seeds.

Durham, November 20th, 1843.

Old Virginia.

A CORRESPONDENT of the National Intelligencer, writing from Wilton, near Richmond, Va., thus speaks of the diminution in the population of that State:

"Thus much have I written with an eye to tempt to Virginia Northern farmers. I have a great desire to capture this good old Commonwealth for the Yankee stock of States. Land is cheap; I say land, of which a good farm may soon be made, from three to ten dollars an acre—not the land on the banks of the river, cleared and cultivated, but land where marl lies, marl worth more to the land than a gold mine. Society is good. The people are a good people. Schools will come with a population. It often seems to me that as yet there are no people here, and I wish, therefore, to see them come. I have to take up a spy-glass to see the houses of my neighbours, they are so far off, and yet so near am I to a capital of about 24,000 inhabitants, that I can see its spires and steeples, and almost hear the hum of its labourers. Back of me, and below me, off of the river as far as I have explored, I cannot find much else but woods, woods, woods. I ride for miles and miles in the forests, looking for people. And yet this is the first settled, and oldest settled part of Virginia! The people have gone off; they have settled in Georgia, Alabama, Kentucky, Missouri, Mississippi, Louisiana, Florida; and now, as if there were too many people left, a bribe is held out to the rest to go to Texas! Well, if they will go, all I can say is, Northern farmers come here and settle. Such land as you can sell in New York and Pennsylvania for fifty, and seventy-five, and a hundred dollars an acre, you can buy here from three to ten.

"It is a shame, I say, that this beautiful country, so blessed in climate, and so little needing only the fertilizing hand of man, should be without people. Here is an old venerable river running past my door, older than the Hudson, now lined with towns and villages—much older than the Ohio—older in settlement and geography, I mean—but where are the people! For a hundred and fifty miles from Richmond to Norfolk, the first explored river running into the Atlantic Ocean, the home of Powhatan and Pocahontas, and the scenes of the truly chivalrous John Smith—*where are the people!* Gone, I say, gone to the South and West, the trumpet blowing them now to go to Texas! Virginia has here depopulated herself to make homes elsewhere. The cry now of one set of her politicians is, manufactures that would keep the people here are *nothing*; Texas is *every thing*. Were I a Virginian, I should esteem as worth more on James river one good white man, than all of Texas from the Sabine to the Rio del Norte. Why, here is Texas all about us, land as cheap as in the distant Texas, and as good."

IN the neighbourhood of Hereford, England, recently, a swarm of bees settled under the bonnet of a little girl, down the side of her face, and round her throat. Fortunately the child stood still, and the bees were hived without her receiving a single sting.

Conversion of Wood into Iron.

The conversion of wood into iron and stone for railroad purposes is exciting much interest in England. If the experiment bears the test of thorough trial, it will add immensely to the facility of constructing rail roads. We hope the engineers and those concerned in the building of rail roads will not delay in testing the value of this new discovery. The following extract of a letter of Professor Wright, dated London June 18, 1844, and published in the Boston Chronicle of July 10, will show how the matter is regarded by intelligent men in England.

"A good deal is said lately about wood, and a patent has been taken out for converting it into iron, I should rather say into stone, by means of iron. This *metalized*, or or rather *fossilized* wood has been used in constructing the terminus of the Dover railway, and it really seems to have both the properties of stone and iron. Rails of it laid down at Vauxhall, for experiment, endured a travel equal to that of a year on the most thronged railway, without any perceptible wear, not even the saw marks of the timber being removed. It is supposed that timber thus prepared will not be subject to rot or decay of any kind. This, time will test. If this proves true, the invention will be of immense importance to the United States, where timber is yet plentier, and iron scarcer than here. The process of preparing timber is simply this; the pieces, after having been fitted by the carpenter or joiner for their places, are introduced into an immense iron cylinder, which is then exhausted by an air pump. A solution of sulphate of iron is then injected, which immediately enters into the exhausted pores of the wood. The wood is then withdrawn, and again placed in a similar vacuum in a solution of muriate of lime, which coming into contact with the sulphate of iron within the wood, decomposes it, and forms an insoluble sulphate of lime or gypsum, within the wood; and the muriate of iron, the other new compound, goes about its business. So the wood becomes thoroughly impregnated with stone, as hard as a rock, and is yet as tough as it was before. The expense of preparing 2000 sleepers, enough for a mile of railway, is said not to exceed $400. Some of the greatest engineers have expressed their confidence in the invention, and the process is employed on many of the government works. What an invention for our Mississippi Valley! Railways built of light porous wood, the more porous the better, probably; may, for less than a thousand dollars per mile, be converted into roads, nearly, if not quite as durable as iron.—*New York Farmer and Mechanic.*

Salt for plum trees.—Mr. Benjamin Jacobs, of Dorchester, had a small plum tree which never bore more than half a dozen plums that came to maturity; seeing salt recommended as a remedy, he applied two quarts, the first of March, in a space about two feet wide around the tree, commencing about six inches from the tree. It was dug into the ground a little. The consequence has been a fine lot of fruit. We saw this tree a short time since, and it was as full as it could hold. It is evident that salt made the great contrast between this and previous years as to the production of fruit.—*Boston Cultivator.*

Points of a good milch cow—The following is from a report of the Guernsey Agricultural Society:—*Points.* 1. Purity of breed and qualities of the dam for yielding rich and yellow butter. 2. Small head, large and bright eyes, small muzzle, small ears, orange colour within. 3. Straight back from the shoulders to the tail, and chest wide. 4. A fine and loose skin, with soft and short hair. 5. Sides well rounded, flank small between the side and haunch, tail fine. 6. Fore legs straight and well proportioned, hind legs broad above the knee, fine and clean below. 7. Udder large, and the teats large and springing from the four corners of the udder; milk-vein large and well defined.—*Ex. Paper.*

Guano, a preservative of flowers.—Those who are lovers of flowers, and delight in having them constantly in their rooms, may continue to keep them fresh for a very considerable time, by putting into the water a pinch of Peruvian Guano, which is rendered immediately soluble, and taken up by the cuttings. Guano is essentially different from all other manures; it possesses most of the constituents of plants, and contains a great portion of salt and other antiseptic—and yet the most fertilising ingredients.—*Exchange Paper.*

Tanners' bark is slow of decomposition. On this account it is generally neglected as a manure. The best way of employing it, is undoubtedly, in the form of compost with lime and earth, or with liquid or solid farm yard manure, by which procedure decay is speedily effected. Tanners very frequently burn their spent bark, and apply the ashes to their grounds.

Eben Elshender, the Moor Farmer.

There is something so lively and agreeable, and so thoroughly practical, in the following article, which we find in *Littell's Living Age*, of the 17th of last month, and which is there credited to *Chambers' Journal*, that we have particular pleasure in transferring it to the Cabinet. It presents to our view a beautiful illustration of the philosophy of farming. The man whose main object is the maintenance of his family, must be careful that his experiments and his enterprises shall eventually prove successful—they should therefore, be of a very limited character, compared with what those may be, of the large capitalist—our friend Eben, for instance. Where the means are abundant, we can scarcely imagine a more pleasing and rational employment, than that of improving worn-out or impoverished, or naturally repulsive soils. It is a delightful spectacle to observe the man of gloomy mind, roused up to successful action and public usefulness, by an object with which the healthiest and strongest might almost fear to grapple. Reference has occasionally been made in the Cabinet to the advantages of long leases. We are aware, that these are less strikingly obvious in this country than in England, where there is not so strong a probability, that economy and thrift will soon enable their possessor to make himself his own landlord: and in the case before us, we at once perceive, that nothing could have been done without a long protracted engagement.—Ed.

Ebenezer Alexander, or, as he was usually called, Eben Elshender, a native of the north of Scotland, was originally a manufacturer, but not being successful in this line, and falling into low spirits, he went to spend some time at a village where an elder and more prosperous brother had a bleaching establishment, in the hope of recovering the tone of his mind by means of country air and exercise. The place seemed at first sight unlikely to cheer up an invalid of the mind, being situated in a high and sterile district, with a north-east exposure, and far from all other human haunts; but things turned out much better than might have been expected, and we shall tell how this came about.

Eben, in his wanderings in the neighbourhood, was speedily attracted to a hollow in the neighbouring moorlands, which might be considered as the only place within several miles presenting the least charm for the eye—a brook, fringed by a line of willows and a strip of green, formed the simple elements of the scene, and from its situation it had a look of seclusion and warmth. He was led, by what he saw here, to surmise that elevation is not an insuperable difficulty in cultivation, provided there be shelter; and soon becoming convinced of the fact, his active mind in no long time conceived that he might employ himself worse than in endeavouring to clear a little possession for himself, at a nominal rent, out of the neighbouring lands. He looked around, but, excepting the few patches in the neighbourhood of the village, the region was one either of unbroken heath or of moss of great depth, broken into pits, and filled with water even at midsummer. Nothing, therefore, could seem more hopeless. On the left only, as he looked northward, a large flat, lying far beneath him, and black and barren, or covered with brown heath, but looking to the sun, seemed to offer the semblance of a cultivated field, and he determined to visit it. He did so, but found it very unpromising. The surface, though apparently smooth at a distance, was rough and uneven; the soil was either stony and shallow, or a deep quick moss, wet everywhere even in summer, and with no fall by which it might be drained. A rivulet skirted it on the east, and was the natural boundary in that direction; but a swell many feet in height rose on the bank, and closed in the surface of the proposed farm from almost the possibility of being drained; and there were similar embankments on the north and west. Still it was a large surface, not materially uneven; it lay beautifully to the sun, and he could not but think that, if drained, and sheltered, and cultivated, here might be an extensive, perhaps a valuable farm. It would not require deep cuttings, as in moss-flows, nor extensive levellings, as in very unequal surfaces. He determined to think further.

He spoke of his purpose to no one, but he brooded over it for days, again and again visiting the ground, and at last he waited on the agent of the proprietor. Even from him he exacted a promise of secrecy, if nothing should follow upon his offer; and then, for a lease of thirty years, offered a shilling an acre for four hundred acres of that unbroken waste, with power to renew his lease for thirty years more, if he should so incline, at five shillings per acre; but with liberty, also, to quit at the end of five years, without being liable in damages from any cause.

Many landlords seem to fancy that though land is of no value in their hands, they have yet a right to be sharers in the profits produced by the intelligence, labour, and capital of others; and that they are extremely liberal in forbearing to share for a few years in what had never existed for them, and yet will, at the end of those few years, be a valuable inheritance to them and their heirs forever. The landlord in the present case was wiser. He saw that he was about to receive immediately, for a small portion of this moor in cultivation, almost as much as

the entire moor brought as an inferior sheep-walk, and that at the end of thirty years it would exceed the original income of the entire possession; while this attempt at cultivation, if successful, would be an example of the utmost value, and might give his village that neighbourhood which it so much required. Not only, therefore, was the offer of our friend accepted, but wood for buildings was voluntarily offered, and a proper allowance for useful and well-constructed drains.

The villagers were astounded to hear that they were to obtain such a neighbour, but happy even in the hope of it. Enclosed as the place was by banks, which, instead of admitting it to be drained, would, if broken down, inundate it with water, it looked to them like a huge frying-pan, and of course there was no abstaining from some little quiet jokes. This last was indeed the worst aspect of the affair. There was a fall for draining within the farm, but not without it; there was no final outlet. Still, our friend determined on pursuing his experiment; and, as a first measure, determined to give his possession a good name: he called it *Glen-Eden!*

He next marked off the site for his steading on a very slight but bare and valueless knoll, being desirous at once to sit dry and to spare his good land if there were any. As he felt that nothing would be more apt to encourage him than the comfort of his home, as soon as his turf-cottage was roofed in, he had a floor laid down in one end of it, and raising up slight ribs of wood by the walls, and continuing them overhead, had the whole neatly covered by a thin boarding, which, with the addition of a little carpet and a slight curtain festooned over his couch—

> A couch ordained a double debt to pay;
> A couch by night, a sofa all the day—

made his end of the tenement seem a palace, and enabled him to look on the storm or the sunshine with equal consciousness of snugness and security to health. Good fires soon made the other end very tolerable to his servants; and being washed with lime, though not plastered, it formed a very cheerful temporary residence. He had the rankest of the heath pulled and secured for thatch or fuel, intending to burn the rest on the ground as soon as the ground should be dry. He next laid out the fields, and ordered them to be cleared of stones—an operation that covered them in some places to the depth of several feet; and finally, he set himself to endeavour to lay the land dry.

For this last purpose, at the lowest part of the farm, but where the surrounding wall, as it may be termed, was highest,—and this was on the east,—he ordered a bank of moss to be dug out, and placed in a situation convenient for being dried and burned. In the course of this digging he came upon both stones and clay, treasures of great value in his circumstances; and lest the winter, by filling the pond with water, should render further digging impossible, he pursued his labours with great assiduity. His determination was, that this reservoir should afford him an opportunity of draining the land: and should it prove unequal to this, that a pump or pumps, to be worked by a small windmill, should raise the water to a height enabling him to send it off his territories. In the mean time he knew what ridicule the suspicion even of such a project would draw upon him, and therefore he gratified inquirers by informing them that he was forming a fish-pond for the residence, and even expected to draw profit from the ice in winter, by letting it out for curling, though the game was not then known in that part of Scotland; and the parties, breathing softly, turned from him, and gently lifting up their hands and eyes, departed. Meantime he was intersecting his fields in numerous directions by drains, leading them into one another, diverging, branching, and every way varying them according to the inequalities of the ground; and after proving their running, carefully filling them with the stones taken from the surface, and all tending at last to the general reservoir. Even in winter, therefore, the land became drier and drier, and people now began to see the use of the pond. By the return of spring he had effectually drained a large space in front of his residence, and generally prepared it for the operation of the plough. And even in this, by a sort of natural instinct, he differed from the accustomed mode. Aware that oxen draw most gently and steadily, he had secured the temporary use of a strong yoke of these, to be tried in all such portions of the soil as seemed likely to be capable of being opened up by the plough. People from the village had been engaged to attend at the same time to complete, with the spade and other implements, what the plough might leave imperfectly done, and give him, if possible, a field; and they had by this time so entered into the spirit of the thing, that the attendance was large, and in many cases gratuitous. He had no lime for the present; but he had been scavenger to

the village during the winter, and he had secured all the runnings from his own cattle in a great tank. He now set to burning, in close kilns, all the turf he had been able to accumulate during the summer; and between these and the refuse of the few cattle for which he had been able to find food, he was enabled to plough and manure some twenty acres of land, which he sowed and planted with the usual crops, accompanying all the white crops with sown grass. To complete his experiment, he had procured a cask to carry out the runnings of his stables, &c.; and having placed it on a cart, and fitted it with a tail-box pierced with holes, such as is used for watering streets and roads, he, as a last operation, sprinkled this liquor, so far as it would go, over the ground that had been dressed with ashes, at night, that no portion of it might be wasted by the sun; and so closed the labours of his first spring.

Science had not then disclosed to us what is now known to be true, that the terms good and bad land, as generally understood, are expressions without meaning, as almost every species of land requires some culture to make it productive; and by suitable means much may be made of almost any kind of land. Neither was it then known, as it now is, what are the precise ingredients necessary to the production of the various crops, and to which the soil is a mere matrix or receiver; and that burned earth or lime, and ammonia or the runnings of stables and other usual manures, contain many of those ingredients. But by instinct or accident, by reasoning from what he had noticed, or heard, or read, and perhaps so far experimenting without much knowledge or expectation, our friend had hit upon many things now known to be useful, and the result surprised many. Not only was there no failure in the crops of Glen-Eden,—as they now began seriously to call it,—but they were rich and beautiful. The oats, standing upon moss of great depth, but drained—and that but for the draining and manure, would not have borne a green leaf—were as luxuriant as if the depth of the moss had been the cause of their excellence. The other soils, lately so thin and dead, were now deep and dry, and bearing excellent barley, with a flush of clover about its roots. Potatoes, the gift of a warm and distant region, were flourishing in their little beds on this lately cold and barren moor, as if it had been their native and appropriate soil; and, in short, industry and intelligence had in a few months triumphed over the ignorance and neglect of centuries.

'Till these things became apparent, however, our experimenter kept in the shade. He had dismissed all his workers, except his hind, whom he termed his "resident manager," and his wife, who was his sole servant, and a Gibeonite of a boy, for looking after his sheep. As the crops began to show themselves, his hind urged upon him the beauty of their appearance, and the almost certain success of his experiment, and consequently the duty of resuming operations. According to all appearances, his first crop would more than pay the expense that would give him a permanent and valuable possession; and as Eben inclined to this opinion, he determined to resume. As a proper preparative to this, he allowed his mother and sisters to visit him; and though they were shocked with the outward aspect of his residence, a black and cheerless looking turf-hut, in the midst of a comparative wild, and guarded by a pet sheep and her lambs, that, as they approached, patted the ground in a very menacing manner, yet when they entered it, and found the servant cheerfully preparing for them a meal in the one end, while in the other was a little parlor such as a gentleman might inhabit with rest and enjoyment, they were not only surprised and pleased, but would gladly have protracted their visit, and were delighted to understand that they were speedily to join him.

Of course, from greater experience he rose to greater success. Even his labourers worked more cheerfully from seeing the success of what had been done. Moss that had hitherto seemed a nuisance, was to him a treasure, and husbanded accordingly; and stones that, above ground, were such an encumbrance, were, when placed in drains beneath it, of the utmost value. He became perfectly happy in his labour of improving, and almost regretted to think that one day it must have an end. Thirty years have passed since these operations were begun; the barren moor has been reclaimed into a valuable and productive farm: the once bare and rugged banks that impeded its draining have long been turned into boundaries covered with herbage of the softest texture, and crowned with woods at once an ornament and a shelter, and that being to be paid for, will render their owner rich. Even the deep and unsightly pool, that first assisted in laying the land dry, has been surrounded and screened by willows and alders, both useful in their way; and the numbers of ducks and geese constantly breeding on its borders and floating on its bosom, must add no inconsiderable item to the profits of the farm. Where the first damp and disheartening turf-shed was erect-

ed, there are now warm and substantial offices; and fronting all, and flanked by garden walls, and behind them trees, stands a farm-house, in its first days a cottage, but always the seat of plain abundance, and now of every comfort and a generous hospitality. Though in a climate not very genial, it is always warm; and from various flowering shrubs spread over it, seldom without flowers. It is the cherished residence of an industrious, ingenious, and very worthy man.

Many, stimulated by his success, soon followed his example, though on a less extensive scale; but the unpromising wild of thirty years ago, is now a sheltered, cultivated, and comparatively fertile spot, and the abode of many industrious and contented families.

For the Farmers' Cabinet.

Wheat Sowing.

ALTHOUGH the wheat crop of the United States does not amount to more than a fifth of that of corn—the latter according to Ellsworth's last Report, being in 1843, nearly five hundred millions of bushels, while the yield of wheat was but about one hundred millions, yet as it is of vast importance to the country, and withal a more precarious crop than corn, farmers cannot, we think, bestow too much care in committing their seed to the earth. It would be impossible to point out the best kind for sowing, as this would depend upon various circumstances. Some kinds will best suit light and thin soils—some will best bear late sowing, &c., and it is for each practical farmer to make his own close observations and draw his own conclusions on this point. But whatever kind may be chosen, it should not be forgotten to sow good seed, well cleaned, steeped in brine and rolled in lime or plaster. If the advantages of steeping seeds in chemical solutions, and *doctoring* them, as professor Johnston calls it, spoken of in some of the late numbers of the Cabinet, should prove to be realised, they will indeed be of incalculable importance in the economy of our business. I hope they will claim the attention of our enterprising farmers sufficiently to be well tested. Because the results stated may appear improbable, it does not by any means follow that they are not correct—there are many things in agriculture which are not yet explained, and the first step towards every improvement, is a conviction that we do not already know all that is to be known.

It is doubtless one of the advantages of our agricultural periodicals, that they render convictions of this kind more easily attainable by throwing abroad among us, the common progress of the country. A late writer has remarked, that individuals moving continually within the same circle, comparing themselves with none but their own neighbours, and having few means of seeing or hearing what is done beyond the contracted sphere of their own native village and nearest market town, are not so easily convinced of their own deficiences, as may be those of wider and more extended intercourse.

Early sowing of wheat is pretty well demonstrated by facts, to be almost essential to good crops. The farmer then who drives his business—the fore-handed man, will have the best reason for hope at the coming harvest.

A late number of the Quarterly Review estimates the average produce of wheat in England, to be 26 bushels, and says if this could be raised to 27 bushels, it would add to the nation's income, 475,000 quarters, worth at 50 shillings, about £1,200,000. The average yield in the United States, is probably not more than 10 bushels—if we could by improved management, bring it up to 11 bushels, we would thus add to the farmers' income, six or eight millions of dollars. Could it be doubled, as no doubt it one day will be, sixty or eighty millions of dollars would be added to the annual receipts of our farmers!

I have thrown out these few unimportant remarks, not on account of my own large operations or experience—for I am but a small farmer—but with a view to stir up to diligent inquiry, every one who handles the plough or sows an acre of wheat. Select good seed—sow early—have the ground in good order, and aim to increase every year the average of your crops. R. N.

Sweedesborough, N. J.

CLEANLINESS IN MAKING BUTTER.—It seems almost unnecessary to allude to cleanliness as peculiarly necessary to the manufacture of good butter. But I do so to bring under your notice the fact, that cream is remarkable for the rapidity with which it absorbs and becomes tainted by any unpleasant odours. It is very necessary that the air of the dairy should be sweet—that it should be often renewed, and that it should be open in no direction from which bad odours can come.—*Johnston's Lectures.*

W. F. KARKEEK, in a late Essay on manures, says where guano is drilled in with seed, not less than a ton of earth or ashes, should be mixed with each cwt. of guano.

For the Farmers' Cabinet.

Best Method of Constructing Cisterns.

To the Editor,—In some parts of the country where running streams are not adjacent to the dwelling—or where the water is *hard*, or difficult to be obtained, in consequence of the great depth which it is necessary to dig the wells, it becomes a matter of considerable importance, to know how to provide, in the best possible manner, cheap and durable *cisterns*. I find the following communication in a late number of the American Farmer, and it appears to me well worth copying into the Cabinet: I accordingly forward it for that purpose, knowing many farmers who would be greatly accommodated by a cistern under their shed, but who have heretofore been discouraged from the undertaking, from an impression that it was exceedingly difficult to prevent continued leakage and disappointment.

H. R.

Burlington co., N. J.

Messrs. Editors,—You will doubtless allow me to communicate through your valuable monthly, *pro bono publico*, but especially for the benefit of those interested, a few brief hints in regard to the proper manner of constructing cisterns; household appendages so necessary to the comfort and convenience of those who are not blessed by nature or art, with a generous fountain of pure soft water at their doors.

Of the various methods recommended and practiced in different sections of the country, the plan of constructing cisterns of brick and water cement, is doubtless far superior to any other, particularly in regard to usefulness and durability. Though we have made one answer a tolerably good purpose for a number of years, made of white pine, bound with strong iron hoops, and firmly set in blue clay, yet the liability of the material to decompose and become useless, even when every precaution is used, suggested the propriety of adopting some improved mode in constructing it. The plan chosen was the one above mentioned. We constructed two of different sizes. For the largest, a pit was ordered to be dug ten feet in diameter and nine feet in depth, the bottom being shaped similar to that of a large potash kettle, and the sides perpendicular. The brick selected from the kiln for the purpose, were those burned hard, though but little cracked or warped. The mortar used was made of two parts coarse clean river sand, and one part ground water cement ready for mixing, obtained at the mill near Schuylerville, N. Y., at 25 cents per bushel, though from the fact that it does not petrify or "set" as soon as some kinds, it is believed a superior quality may be obtained. Water is worked in to render it sufficiently soft for use, like common lime mortar. With materials and pit thus prepared, the mason commences operations exactly in the centre and bottom of the excavation, by covering the surface with a thick coat of his mortar, and laying the bricks with their flat surfaces contiguous, forming as soon as convenient, a perfect circle of some three or four feet in diameter. Regular courses are then laid around the circle, taking care to increase the inclination of the upper edge towards the centre, so that when the bottom is finished to the edge from where he wishes to carry up the sides, the bricks will be placed in an angle of about fifty degrees with the perpendicular side. Extreme care should be taken with this part of the work, and an extra quantity of cement used, in order to prevent the possibility of a leak, as in turning up the wall, the outer edges of the bricks must necessarily be further apart than the inner, and every cavity should be completely filled with the mortar. The sides were then carried up perpendicularly five feet, from which point they were gradually drawn in until carried up nine feet, and the neck or top so small as to admit of being covered with large slabs of white marble, with a circular orifice sufficiently large to admit an ordinary sized person, and to place a pump for raising the water. A curb is then carried up sufficiently high to prevent any action of the frost on the work below, and filled in with dirt or gravel that will not heave. At the top of the brick wall and immediately under the stone covering, is left an opening the size of a brick, from which a drain is laid to conduct off the surplus water, made like the cistern of brick and cement. While the wall is going up, the mason should be particularly careful to lay on a good coating of cement over the outside before filling in, care being taken to preserve a sufficient space between the bank and wall for this purpose. To complete the work, a flat stone is placed on the bottom of the cistern in a bed of mortar for the pump to stand upon, the whole inside plastered with cement similar to the walls of a house, and after drying a few hours, whitewashed with a thick mixture of cement and water, and the work is done. Water may be admitted after the work has become partially hardened, but should be conducted to the bottom in such a manner as not to wash the coating of cement. The first quantity of water discharged into it, will be hardened and rendered unfit for use, by the sulphate

of lime contained in the cement, which may be pumped out, when the next will be soft.

The advantages of having cisterns constructed as above described, must be apparent to the most casual observer. When done in a workmanlike manner, and with proper materials, they will be as durable as though formed of solid rock, and the inside presents a surface as free from filth as any stone vessel used for culinary or household purposes. Different families will of course require different sizes, and the amount of material necessary to construct them, varies accordingly; the one described, containing something like 45 hogsheads, the other about 20. The builder, Mr. Richard Swartwout, of Schuylerville, N. Y., has often, to save expense, been ordered to plaster the cement directly on to the earth as shaped with the shovel, and covering with plank or large stone as before. But the mode is evidently objectionable, as, if accidentally exposed to the frost, the sides will crack and become leaky. Brick cisterns laid up with common mortar, are also liable to crumble in time, and prove defective. In either case, however, the top should be sunk below the surface and covered with gravel sufficiently deep to prevent the action of the frost on any part of the masonry. If any of your readers choose to construct their cisterns according to the above directions, taking care to secure an experienced workman and good materials, they will find doubtless, should they live so long, that the lapse of half a century, will not affect their usefulness or impair their durability.

J. CHACE.

Hoosick Falls, June, 1844.

Pressing Hay.

RAIL-ROADS and canals make many things portable to distant markets, that otherwise would not pay. Large towns, for instance, cannot be supplied with hay by *wagons*, with profit to the farmer, at a distance beyond 15 or 20 miles—but by packing and sending by rail-roads and steam-boats, and sail-boats, it may be sent any distance. Milk, again, that could only be sent by ordinary conveyance from a few miles around large cities, is now sent from 100 miles around New York.

The following information about packing hay, was some time since kindly communicated to me by Doctor G. B. Smith, of Baltimore, a man of uncommonly strong and inquisitive mind, who is ever ready to exhibit his lights when called on—while some men, esteemed wise, hide theirs under a bushel, or have none to hide. I. S. S.

I will answer your questions according to their purport:

1. Size and weight of bundles of hay, as sold in this market, 4 feet 4 inches long, 30 inches deep, 30 inches wide, average weight 350 lbs. Some weigh 300 lbs., some 400 lbs., and all intermediate weights.

2. Cost of apparatus for pressing hay, from $125 to $350. There is no fixed price, and no one here that I can find, who makes a business of erecting them. A well built tobacco press, it is supposed would answer for a hay press.

3. Pressed hay in bundles, comes from the North, (New York, &c.,) and also from this neighbourhood. Mr. Fenby himself, has a hay press, and puts up a large portion, if not all he sells.

4. The difference in price between the hay loose and when pressed, is supposed to be about $1 per ton; but it must be evident that pressed hay is worth no more to the consumer than loose hay. Pressing is only an advantage to the producer, as it enables him to get it to market cheaper than he can loose hay. It certainly adds nothing to the qualities of the hay to press it into bales. Ordinary wagon hay, is selling in our streets now, (25th of January, 1843,) at $9 to $11 per ton. Fenby asks for his pressed hay, $12 per ton. But I presume that Fenby's pressed hay is better than ordinary hay, or he could not expect to get so great a difference of price for it. In estimating weight, a bundle of hay is equal to five barrels.

5. Freight of hay to New Orleans, depends entirely upon your meeting with vessels going out empty or nearly so. In such cases fifty cents a bale will be taken. In other cases the freight would be higher than the hay would be worth. I am told that hay is cheaper *now* in New Orleans, than here.—*Marlborough Gazette.*

From the Marlborough Gazette.

Plank Fences.

Heart Yellow-pine cheaper than Hemlock.

THERE are many memoranda like the one subjoined, which are torn up or thrown away, that might be useful in themselves, or lead to useful thoughts and reflections, if committed to the columns of an Agricultural paper. Every day I receive letters, from which useful extracts might be made, if I had time to do it; but alas, how often, (aye, every day,) we have occasion to wish for a double set of all our faculties, to do half that we would wish to achieve, in the course of a short life, which, short as it is, is one

half of it spent in *eating, drinking, or sleeping!*

The memorandum which follows, I find in a letter from a gentleman on the Eastern Shore of Maryland, of ample means, yet of not the less systematic habits—making nice calculations, and keeping exact accounts, being in that respect an example worthy of regard by many who have stronger reasons than he to do as he does. I. S. S.

Plank Fences.

5,097 feet Hemlock plank, $11 per m.		$56 06
100 lbs. nails,		5 50
202 posts, Cedar, White oak, &c.		30 30
19 days labour, one man, at 75 cts. " " board, " at 25 cts.		19 00
15 days labour at 37½ cts. 15 days board at 18¾ cts.	56¼	8 44
		$119 30

The above materials make 202 panels post-and-rail fence,—59 cents, say 60 cents per panel of eight feet.

Not having Hemlock plank enough to finish my range of fencing, purchased

1495 feet Southern heart pine, flooring plank, 6 inches wide, 1½ inches thick, cost $16 50

Freight, 2 00

$18 50 p. m.	$27 66
Labour of 1 man 4 days, 75 cts. board 25 cts.	4 00
Labour of 1 man 4 days, 37½ cts. board 18¾ cts.	2 25
20 pounds of nails, 5½ cts.	1 10
61 posts, locust, 24 cts.	14 64
	$49 65

The above plank made 61 panels of 10 feet per panel, and as the panels are one-fourth longer than the Hemlock, the account will stand:

Hemlock,	60	
Add one-fourth,	15	
	—	$75 00
Southern pine,		82 00

One fence of the latter, from the superiority of materials, is worth two of the former. The great saving is in the posts—also the labour of every kind.

Yours truly,

Chasseur aux Renards.

Dr. Abernethy's prescription for the gout, was to live upon sixpence a day, and *earn* it.

For the Farmers' Cabinet.

Book Farming.

We hear a great deal said among farmers, about looking to Agricultural papers for information on practical matters relating to their business, and I am inclined to think that some among us, do not sufficiently value their importance. As a little illustration of the many hints which I acknowledge myself to be indebted to them for, I send the following from the New England Farmer: and I think a man who makes a little use of his head as well as his hands, can hardly help getting from its perusal, more than a year's subscription to a paper which contains it. W. S.

Bristol, Pa.

In conversation with Mr. G., whose farm had run backwards, I suggested to him the idea of collecting the leaves and decaying vegetable matter from a piece of woodland near by. "Why," says he, "I hav'nt much opinion of this vegetable matter—'tis sour stuff—only give me dung enough from the hovel windows, and I can raise as good crops as Mr. I. does, with all his swamp muck, lime, compost, and book-farming." I inquired if he took an agricultural paper. "No," said he, "I did take one several years ago, and that had so much to tell about a new kind of potatoe, that they sold for 25 cents a pound, and after all, it was'nt no better than the long reds; and about tree corn and mulberry trees; and a good many farmers got *bit*, by believing their great stories, that I got sick of, and stopped it, and would not now take the gift of one."

I afterwards called upon Mr. I., the "book farmer," as Mr. G. sneeringly called him, and found him a middle-aged, intelligent farmer, who was quietly improving his land by every means within his reach. I was so much interested in his management, that I thought I would attempt to communicate an account of it to the public, through the columns of your useful journal, with the hope that other farmers might be benefitted by his example.

Upon looking into his barn, I found his hovel floors were water-tight, and sloping toward the back side. In the rear of the cattle, was a kind of trough of the width of 12 or 15 inches, made by sinking one of the floor plank two inches; this was also water-tight: the droppings from the cattle mostly fell into the trough, and by giving the cattle a good bedding of litter every night, they were kept comfortable, and nearly as clean as when at pasture. He had the past winter used several loads of saw-dust from a

shingle mill, and leather shavings from the currier's, for the purpose of bedding, and soaking up the urine. The hovels were daily cleared out by wheeling the manure and litter into the centre of the yard,—which is dishing,—and piling it up in a snug heap. His barn is so situated he cannot dig a cellar under it, but intends the coming season to build a shed for the purpose of keeping his manure under cover in future. The floors of his horse stables are tight: every day they are cleared, and the manure and litter are spread under a shed, and by being trodden by his stock, it does not heat and fire-fang, as is too often the case. Most of his winter manure will be mixed with swamp mud, to compost through the summer. I inquired respecting a heap near his barn: he said there were two cartloads of lime-mortar, that he bought for a trifle, of a man who had taken down a large house: it was mixed with about four loads of brake-root turf, about eighteen months ago; it had been left this length of time for the purpose of having the plaster come to pieces, and rotting the turf. Last fall it was shovelled over, and two lime casks of fleshings procured at the tanner's, mixed with it. He thought while this animal matter was decomposing, there would be a large amount of nitrogen generated, and give him a large amount of nitrate of lime by spring, when it would be again shovelled over, and 35 bushels of good ashes mixed, and then applied to an acre and a half of ground, upon which he should sow wheat: I think he said the compost was to be put on after the ground was ploughed, and to be harrowed in with the wheat. The ashes he had purchased at ten cents per bushel.

He had a cart-load of the waste wool, or flyings, from the wool carder's; this was to be boiled for a short time in lye,* to cleanse the oil and grease, and to render the wool more decomposable. By way of experiment, a part of it would be used to manure some of his corn and potatoes in the hill, the rest would be mixed in the compost heap, to remain a year or so. He also had a large quantity of old woollen rags, that he bought of a store-keeper for a trifle—having, he said, read in some book, that 100 lbs. of woollen rags contained as much nitrogen as 300 lbs. of cow manure. Some of these rags were to be chopped up and steeped in urine for a few days, then to be partially dried and sprinkled with gypsum, and used as manure in the corn and potatoe hills; the other part would, like the waste wool, be composted. He had a number of casks of fleshings that were obtained at the tanner's, which would be mixed with vegetable mould soon as the snow was off, and he could obtain it; he has also taken the hair, lime, and piths of horns from the tan-yard; the bones are broken up by the hammer and mixed with the manure and ploughed in; they will slowly decompose, and supply phosphate of lime to his land: he had about two barrels of the settlings of salts from the pearlash factory—similar, he thought, to the material known as glass factory manure; an account of its use and value is given in Mr. Colman's Fourth Report, pages 344–5, by a Mr. Jarvis. There were a few inches of lye upon the top of the salts in the barrels, so strong as to float an egg with nearly one half its surface above the lye. This, he assured me, according to Mr. Jarvis' statement, would convert 10 or 15 loads of loam or muck into a compost equal to the same amount of good stable manure. All these materials, sawdust, wool, fleshings, hair, lime, piths of horns, and salts from the potash, he had for removing, as they were considered a nuisance, and of no value by the manufacturers or owners. The droppings of the fowls are occasionally scraped from the boards, over which the hens roosted, and put in old casks: in the spring it will be moistened with urine and ground to pieces with a hoe, and mixed with plaster of Paris, to be applied to grass land, or put about the corn and potatoe hills, at the first or second hoeing;—he styles it "Yankee Guano." He has a strong tight box under his back house, in which is frequently thrown gypsum, or charcoal dust obtained from the coal-pen of the village blacksmith: it absorbs the smell, and once in a week or two, the contents of the box are mixed with dry peat or sawdust, or some other material, to absorb the liquid part, and put into old tight barrels. This is home-manufactured *poudrette*. His hog-yard is of good size, has been dug to the depth of 18 inches, and a good plank floor over the whole, which makes it easy shovelling out the manure. The suds from the wash are conveyed to it by a spout, which with the manure of his hogs, mixed with the loam, muck, and other materials, make many loads of valuable manure. He has tried many experiments that he has seen recommended in the agricultural books and papers that he has read; says, after he became "one and twenty," he did not feel obliged in all things to follow in the "footsteps of his worthy predecessor," his father, and sometimes pursued a new track, and went upon his own hook. He intends getting a small quantity of guano and ground

* We hope he did not pour this liquor into his gutter, to run off and be wasted.—W. S.

bones the coming spring, for the purpose of testing them by the side of other manures. Several of the kinds he has not yet tried, but from his remarks, I feel satisfied he will find them all invaluable helps for increasing his crops, and from the nature of some of them, valuable and permanent improvers of his soils.

Alpaca.

Probably few ladies who wear and admire the beautiful fabric called Alpaca, are aware of the source of its production. The Alpaca is a wool-bearing animal, indigenous to South America, and is one of four varieties which bear general points of resemblance to each other. The Lama, one of these varieties, has been long known and often described; but it is only within a few years that the Alpaca has been considered of sufficient importance to merit particular notice.

Nine-tenths of the wool of the Alpaca is black, the remainder being partly white, red and grizzled. It is of a very long staple, often reaching twelve inches, and resembles soft glossy hair—which character is not lost in dyeing. The Indians in the South American mountains, manufacture nearly all their clothing from this wool, and are enabled to appear in black dresses, without the aid of a dyer. Both the Lama and Alpaca are, perhaps, even of more value to the natives as beasts of burden than wool-bearing animals, and their obstinacy when irritated, is well known. The importance of this animal has already been considered by the English, in their hat, woollen and stuff trade, and an essay on the subject has been published by Dr. Hamilton, of London, from which some of these details are collected.

The wool is so remarkable, being a jet black, glossy, silk-like hair, that it is fitted for the production of texile fabrics differing from all others, occupying a medium position between wool and silk.

It is now mingled with other materials in such a singular manner, that while a particular dye will affect those, it will leave the Alpaca wool with its original black colour, and thus giving rise to great diversity.—*Iris.*

Drop Cakes.—One quart of milk, a large teaspoonful of salæratus, dissolved in a cup of cream; to which stir in flour very smoothly until a thick batter is formed. Then dip your spoon in milk, and with it place your batter at short distances in a buttered pan. Very delicate, made entirely of cream, either with or without eggs.

For the Farmers' Cabinet.

Turning in Green Crops.

To the Editor,—I saw an editorial in the last number of the Cabinet, calling upon its readers to bear their proportion of the labour, or the pleasure, if you choose, in giving variety and interest to its pages: and it seemed to me so reasonable that we who are principally benefited by its publication, should yield a hearty support, not only by our subscriptions, but also by our pens, to this well established paper, that I looked around me, to see what I could find to say, which, while it filled a column, would at the same time, give a valuable hint, or stir up to action a fellow ploughman, who might perhaps otherwise forget to practice what he had already learned. It immediately occurred to me to say, that I believe we are very apt to overlook one of the cheapest and most efficient modes of improving our impoverished lands, and sustaining them in their fertility. I allude to the ease with which we might all avail ourselves of the expedient of turning in green crops. Clover, buckwheat, corn, have often been recommended for this purpose; and among these, some prefer one, and some another. Corn sown broadcast, even if the ground is poor, will start up and soon afford a very considerable crop to plough in. Buckwheat is of quick growth, deriving much of its support from the atmosphere, and therefore returning more to the earth than it draws from it. Clover also, from its abundant foliage and large tap root, is quite a favourite,—and deservedly so in my opinion—with many for ploughing in. Where the ground is tolerably good, an amount of green herbage will spring up, that will very nearly or quite equal a moderate dressing of stable manure. Clover to be of much avail, must have a good footing in the soil. Corn or buckwheat may be sown in the early part of summer, and in the course of two or three months, will be ready to be turned under, when the ground may be put in wheat. Large crops of wheat and rye have often been the result of this method; and it certainly is much cheaper, where there is a scarcity of manure, than to buy it; but I do not think our general practice is such, as shows that farmers are sufficiently aware of the means they have within themselves of improving their lands.

Now I am aware that this is not the time of year to sow either corn or buckwheat, for the purpose above suggested—but let those who have a good swarth of clover on land which they wish to put in wheat, turn in a good plough and cover it up thoroughly, and

I will venture the prediction, that their chance for a crop will be as fair as their neighbours, who manure from their barn-yards.

A. N. R.

Essex co., N. J.

Meeting of the Farmers' Club.

The New York Sun gives the proceedings on the 20th of last month, most of which we copy below.

General Tallmadge in the chair. Mr. Wakeman, the corresponding secretary of the Institute, called for the reading of a circular from the Farmers' Club to the Gardeners and Farmers of the Union, on the subject of the Farmers' Convention, in October next, at the Fair in New York. The circular was read and unanimously adopted. President Tallmadge then offered the following remarks:—"In looking over some title deeds and other papers recently, I found some specimen cards of wool from Saxony sheep, which I obtained with some of the sheep, in 1826—I present them to you, gentlemen, together with a specimen of the clip of this summer from my sheep, which had been Merino, crossed by these Saxons. These specimens exhibit the influences of our climate upon this fine wool, in the county of Dutchess, in this State, where I reside. The staple of this American wool is much longer than the Saxon clip, and appears to be as fine. The original Saxon gave two pounds at a clip; this American product gives three pounds at a clip. The weight of the fleece depends much on the *fare and keep*. Our flocks have for some six or eight years been neglected, or they would have been much better than they are, and I will show the reason why.

"Before 1800, we had a long-legged, coarse woolled sheep; the wool of which was worth from *six to ten cents* per pound. Col. Humphreys, our Minister to the Court of Spain, and Chancellor Livingston, who was in Paris, caused some Merino sheep to be sent to us. They were eagerly sought for by our farmers, and the wool gradually spread over the nation. In 1826, the Saxon fine woolled sheep were imported; the price in 1828, was from *sixty to eighty cents* per pound. Wheat was sold for two dollars per bushel. But wool went down, down, down to *twenty-five cents* per pound. The sheep, not being worth their feed and care, were allowed to go to destruction, and one method was to kill and boil them, and get all the fat out of them that was possible. At Catskill, a large sheep-destroying establishment was constructed, where thousands of them passed through this *trying* process. Thus have our finest sheep in number and quality been destroyed. The public prints of Dutchess county have stated truly, that Dutchess had *seven hundred thousand pounds* for sale in the market, at *sixty to eighty-seven cents* per pound, or at an average of *sixty-five cents* per pound, per annum. Before 1842, this product of Dutchess county sunk to three hundred thousand pounds, at twenty to twenty-five cents per pound only; so that from an annual wool sale for four hundred and fifty-five thousand dollars, she dwindled down to a sale for seventy-five thousand dollars; then adding the loss of the carcass of the sheep, it is just to state, that Dutchess county has sustained an annual loss of about half a million of dollars. This is no exaggeration."

Poisonous weeds.—D. Jay Browne, Esq., moved the adoption of a resolution recommending to city and town authorities, and to gardeners and farmers in general, to exterminate all weeds that are poisonous to men or stock, or injurious to crops, before they go to seed. Mr. Fleet inquired if stramonium is not useful as a medicine. Dr. Field replied that there is a much greater quantity than is required for medicinal purposes, and that the destruction of weeds is a very important matter. They occupy a great deal of ground, and abstract the moisture; they keep off the dew from other plants, and deprive them of their nourishment; the seeds of the weeds become scattered far and wide, sometimes lying in the ground, under certain circumstances, a long time without vegetating. Gen. Johnson was of opinion that they last for many years, and when brought to the surface or place favourable to them they grow, and that such was also the case on some pine lands, which have lost their timber—the acorns of scrub oaks grew, after being in the ground for fifty years. With regard to weeds, Gen. Johnson remarked that he made manure of some of them, by mixing them with headland soil and liquid manure from the stable. For an onion bed, he usually took the dry weeds and brush and burned them together—they become a sort of charcoal, and make an excellent top dressing. The place for making the manure ought to be fixed that the liquid manure from the stable and yard would easily run into it, and be absorbed by the weeds, &c. In Flanders the urine of a single cow is considered to be worth *ten dollars* per annum.

Disease amongst potatoes.—Mr. Fleet stated that the potatoes of Westchester and elsewhere, appear to suffer from some disease—the leaves fall from the stems and

the potatoes seem to be affected, and he considered the subject worthy of immediate investigation, a measure strongly recommended by the chairman.

Grapes.—Mr. Fleet stated that Mr. Shonnard, of Westchester, has some very fine grapes which have been shaded by locust trees They are far better than common. He further remarked that the shade of locust trees was favourable to the growth of grass, and that cattle had made this discovery.

Insects.—Col. Clark said that he had a lot of young locust trees, which appeared likely to be destroyed by the well known and troublesome "apple borer." With a view of exterminating them, he had, with a stomach pump, injected into the holes made by the borers, lime water, also caustic, potash and spirits of turpentine, since which time he has had no further trouble with them, and the trees so treated are now growing well.

Mr. Wakeman remarked that while he was in the State of Maine, he had gathered some facts which appeared to be worth mentioning. It is estimated that on a peninsula, about three miles long and one and a half miles wide, there are two thousand apple trees which have been generally attacked by the worms, and that their prospect of bearing fruit is hopeless. About forty trees only, belonging to a Mr. Perkins, appeared to be untouched. These were perfectly green and vigorous, and likely to bear fruit. The trunks of these trees had been whitewashed, and on inquiry of the proprietor, I ascertained that in the latter part of April he scraped all the dead bark off these trees, so as to leave them perfectly smooth. He then whitewashed them with lime from the bottom to about eight or nine feet high, and this was all that he had done to them. On one tree about a dozen worms had been found and picked off, but not a single worm had been found on any other of the trees that had been whitewashed, which fact spoke well for the use of lime.

With regard to poisonous plants being avoided by animals, Mr. Allen said that the goat eats stramonium freely. Mr. Browne said that the goat eats hemlock, another poisonous plant. Col. Clark said the ass eats green tobacco very freely. Mr. Meigs stated that the gazelle, the antelope, and the camel, also eat tobacco with apparent satisfaction. On this subject President Tallmadge remarked that on offering tobacco to an elephant, he would knock the person down with his trunk. With regard to vermin on trees, he stated that whale oil might be considered a specific. Dr. Gordon, in reply, remarked that whale oil soap had been long recommended and employed for this purpose by English orchardists, but that the soap has a tendency to injure the flavor of the fruit. In a letter to Dr. Mitchell, it was stated that a peach which had been sent to the Dr. was so impregnated with salt, in consequence of a quantity having been placed at the root of the tree, as to render the fruit entirely valueless.

Dairying.—The best dairying in New England, is upon our roughest, highest granite hills. The quantity of butter turned out from cows pastured upon them, is much greater, and the quality much better than that produced from the lowland pastures. Fortunate is the farmer with the good housewife, who knows how to make the best butter. Mr. Baker, who resides about four miles out of this town on the Bow hills, furnishes three large families in Concord, with all their butter on the produce of five cows, after commendably serving up his own family in butter, cream, and the best new milk. These five ordinary cows, gave him in the month of June, as high as thirty-six pounds of butter in a week; and while others were selling their butter for store pay, at ten and twelve cents a pound, he was regularly dealing out his butter for cash, at fifteen cents a pound. The hard flinty hills of New Hampshire, contain beneath the earth's surface those elements of fertility which make our soil really more desirable, under a proper treatment and cultivation, than the best prairie country of the West and South. We have here no malaria, producing agues and chills and congestive fevers. We have no overflow upon the hills, destroying the crops far and near: from the dangers to which poor humanity is the heir in nature's great convulsions, our granite hills are at the highest point of distance.—*Farmers' Monthly Visitor.*

To make Water Cold for Summer.—The following is a simple mode of rendering water almost as cold as ice: "Let the jar, pitcher, or vessel used for water, be surrounded by one or more folds of coarse cotton, to be constantly wet. The evaporation of the water will carry off the heat from the inside, and reduce it to a freezing point. In India and other tropical regions, where ice cannot be produced, this is common. Let every mechanic or labourer have at his place of employment two pitchers thus provided, and with lids or covers—the one to contain water for drinking, the other for evaporation—and he can always have a supply of cold water in warm weather."

Waste Manures.

Carey & Hart have lately published one of the best Essays we have seen on "The Economy of Waste Manures." It was written by John Hannam, for the Yorkshire Agricultural Society, and should be in the possession of every farmer who properly appreciates the value of the fertilizing materials which he is in the habit of collecting together—he will be vastly aided in his operations by the judicious, practical and simple instructions of the writer: and he who does not already thus appreciate his manure heap, will hardly fail to be stimulated on this point in a manner that will soon show itself on his increased crops. Below is an extract directly to the point.—Ed.

Nothing must be allowed to run away in the form of a fluid, or to fly away in the disguise of a smell. * * * Mark out a piece of ground on which the dunghill is to be made, on a good slope, if possible, and close by a pond. Cut a gutter all round, and puddle it with clay, so as to make it water-tight. Then, at the lowest part, outside the place where the dunghill is to lie, dig a sink hole eighteen or twenty inches deep; let this be well puddled, and connected with the gutter already spoken of. Things being thus prepared, throw down a layer of of manuring substances, about a foot deep; tread them well down, and scatter some fixer over it: finally, water it well. In this manner go on with layer after layer, till the heap is the desired height. * * * During the operation of making the heap, some water will have drained away; in that case, it will have run into the gutter, and been collected in the sink hole. Scuppet the water out as the work proceeds, and throw it back on the dunghill. If the hole is not large enough, another can be made near it; none of the drainings *must on any account be lost.* It should have, at least, once a week, for a month, a good quantity of fluid thrown upon it. Pot-boilings, and soap-suds, are much better than common water; but urine is preferable to both. * * By these contrivances nothing is allowed to leak, but the dunghill becomes a soft mass, holding fast all which belongs to it, except what flies away. To catch the latter is the *purpose of the fixer.* There are many kinds of fixers,—oil of vitriol, blue vitriol, salt and lime, (not either salt or lime by themselves on any account,) gypsum, &c., may be used; but some of them at all times, and in some cases all them, have the fault of costing money. A substitute which costs nothing except labour is, therefore, to be sought for. Such exists in cinder siftings, charcoal dust, good black earth, peat or bog mould, rotten sawdust, leaf mould, black mud from ponds, bottoms of wood stacks, soot, brick-dust, burnt clay, &c.

Mr. H. S. Thompson, of Kirby Hall, at the late meeting of the Yorkshire Agricultural Society, at Doncaster, recommended the plan he adopted, which was, "to have a pit dug in the earth, in which to throw the manure, instead of having it piled up in a heap. The bottom of the pit is water tight, and has a slope towards the centre, where a tank is placed so as to receive the drainings from the manure. These drainings are frequently poured over the manure, so as to keep up a regular, but not excessive, fermentation. He was in the habit of collecting all the couch grass, stubble, and other vegetable refuse which the farm afforded, and spreading it on the bottom of the pit to the depth of six or eight inches. This, when well soaked with the liquor that drained from the manure, which was carted upon it, and fermented together with that manure, was, he believed, as good as any other portion of the heap. In this way he had, last year, on a farm of two hundred acres of arable land, increased his manure by two hundred single horse loads, which was equivalent to four additional loads per acre for his fallow crops. If the manure was wanted for immediate use, it should be lightly thrown together, and, after being well soaked with tank liquor, have a thin covering of soil to absorb the gases which would otherwise escape. In this case, it must be carefully watched and well watered, from time to time, to prevent the fermentation from becoming excessive. If the manure is to be kept six months or more, it should be made solid by carting over it, and have a thick covering of soil, which would nearly exclude the air. In this way manure may be preserved for a year almost without loss. In very dry weather, the drainings from the manure are not sufficient to keep it moist, and it becomes necessary to saturate it with some other liquid. If the farmer has other tanks on his premises, it would be better to use their contents for this purpose, but where such are not at hand, plain water may be used, and has been found to answer exceedingly well."

Sheep.—It is very common in the months of June and July, for some kinds of sheep, especially the fine Leicester breed, to be struck with a kind of fly, and by scratching the place with their feet, they make it sore and raw. To prevent this, take tar, train oil and salt, boil them together, and when cold, put a little of it on the part affected. This application keeps off the flies, and likewise heals the sore. The salt should be in very small quantity, or powdered sulphur may be used instead of it.—*Boston Traveller.*

For the Farmers' Cabinet.

Manuring Seeds by Steeping.

Well has the editor of the Cabinet called it a "startling doctrine, that all seeds may be so treated as to grow most luxuriantly, without any manuring of the soil in which they are cultivated,"* for it seems to overthrow some of our long accredited notions concerning manures and rich soils. From pure beach sand, or an equally barren subsoil, we are promised a greater crop without manure, than has usually been obtained from a good soil well dressed! and this, on the simple condition that the seed used should undergo a short and cheap preparation! One cannot help being curious to know if this magic power, given to the seeds of annual and other short lived plants, would be alike imparted to those of slower growth—to the peach, for instance, of a few years, and to the oak of an hundred?—if so, what giants may the forest not be made to produce.

Yet we are bound to give heed to these claims, for they are confirmed by many witnesses; a tithe of the testimony offered to sustain them, would suffice to convict of the highest crime in our courts of justice. Moreover, when we remember that a few elements constitute the food of all vegetables, and that air and water furnish the most of these; when we see a plant thrive well in a bottle of pure water, and the sturdy oak springing from a naked rock with a few chinks only for the admission of its vagrant roots, we are led to consider whether the food of plants is not more abundant and more accessible than we had supposed; and whether *the first condition of vigorous growth be not a good appetite and good digestion, to be derived only from a robust constitution through a vigorous germ or seed.* If so, we have some clue to the astonishing results referred to, and some rational ground of faith in the matter. But my object was, by relating a fact having some bearing upon the subject, to encourage others to do the same, for doubtless many such facts are afloat in the community, and it is only by their multiplication and aggregation that any thing like a safe theory can be formed in the premises.

Some years ago, the writer was shown by the proprietor and cultivator of a small farm of a light sandy soil, in the eastern part of Massachusetts, seven ears of corn, of the kind called brindled, or red and white; five were large full ears, the other two, smaller, but sound and merchantable. They were all, he said, the produce of a single seed! this seemed almost incredible to all, especially when he added, that no extraordinary care or dressing had been used in its cultivation; and had not the relator been a man of undoubted integrity and noted accuracy, his account would, I have no doubt, have been discredited. But perhaps the most singular feature in the case was to come; he had not even planted the corn, it had sprung up from the dung dropped on the spot by a corn-fed ox! Thus, this prolific seed had passed through the organs, but escaped the process of digestion. This circumstance was viewed at the time as a most singular coincidence, but strange to say, of the many that were acquainted with the facts in the case, no one, so far as I know, looked upon them in the light of cause and effect.

This case seems to me to go, as far as a single case can, to confirm the novel doctrine of the German,* and to justify the trial of the excrements of cattle made liquid, and of their urine also, and perhaps of the guano, for fertilizing seed.

On reviewing this subject in the light we now possess, I cannot but consider it as promising important results to agriculture, and as preeminently worthy the attention of every intelligent husbandman. At the hands of the physiologist too, in connection with the animal as well as the vegetable kingdom, it seems to me the whole doctrine is worthy of the closest scrutiny; it would not surprise me if in it should be found a clue to the marked dissimilarity of offspring of the same parents, occurring under what appeared to be similar circumstances.

It is the intention of the writer to try the effect of the new process on the *germination* of seeds to some extent;—further than this to test the agricultural value of the new doctrine, his situation is not favourable—it is favourable, however, to the preparation of the chemical solutions, or "corn-growing liquids," of James Campbell, an account of which is contained in the Cabinet of seventh month last; and it is his present purpose, in order to facilitate the attempts of others to test their value, carefully to make such solutions, and to furnish them to applicants at a barely remunerating price.

Paul Swift.

Philadelphia, Eighth month 30th, 1844.

A mixture in the proportion of one ton of refuse fish to ten tons of earth, are used in Cornwall as a manure for turnips.

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* See page 377, last vol. of Cabinet.

* See last No. of Cabinet, page 18.

Raising Water.

We have not unfrequently been spoken to on the subject of raising water for family purposes, where it is difficult to obtain it by the ordinary process from wells. The following communication appearing in a late number of the American Farmer, presents the subject in quite an interesting light, and where cisterns are not resorted to, the method suggested may be turned to valuable account.—Ed.

To the Editor,—

Sir,—The object of this communication is to make known, for the benefit of others, a means of raising water, which I have employed with perfect success under circumstances which must be common throughout the State.

My summer residence is upon a very narrow and gravelly spur of Elkridge, near the Thomas viaduct, immediately above the Hockley Mill. On one side is the Patapsco, and on the other a very deep ravine, at the bottom of which, and one hundred and fifty feet below the site of the house, is a small rivulet with a rapid fall, which, in ordinary seasons, affords a supply, in dry weather, of about six gallons of water per minute. Before I commenced building, I dug a well, which promised to answer my purposes; but after I had completed my improvements, finding that it did not furnish me with quite as much water as I required, I attempted to increase the quantity by deepening the well, when an unlucky blast opened a seam in the rock and I lost all that I had at first obtained. The result of going still deeper was so problematical, that I now turned my attention to the rivulet just mentioned; and seeing, about this time, an advertisement in an English paper of the improved Hydraulic ram of Easton and Amos, of London, I wrote to the firm describing my situation; and their reply being favourable, I imported one of their machines, which I have had in use since May last. Some doubt as to the operation of the ram, induced me to guard against possible failure, by conducting a distant spring in pipes under ground, to a point from which I could pump it by a common pump; but the ram succeeded perfectly, when it arrived, and was put up, and it is to this that I now wish to call attention.

The "*Belier Hydraulique*" of Montgolfier, is described in all works upon natural philosophy, and has been known, for many years, as one of the most beautiful contrivances in the range of mechanics. But it was regarded, generally, as more admirable in theory than in practice, until the improvement of Messrs. Easton and Amos, gave to it an adaptability, which has made it of very common use in England. If a column or body of water, moving rapidly under a head, through a pipe, is suddenly checked, its tendency is to burst the pipe. This is well known in all places where there are water works, from the bursting of the leaden supply pipes, where these are not strong enough, on the sudden shutting of the hydrant cocks. If a hole is made in the pipe just above the cock, the water will escape from it in a very high jet, much higher than the head, whenever the cock is shut. It is this principle which is brought into action in the hydraulic ram. If a smaller upright pipe is attached to the hole, just mentioned, in the main pipe, having a valve shutting downwards, which will permit the water to pass upwards, but not to return, each opening and shutting of the cock will force up into the smaller pipe a quantity of water, in proportion to the head upon the main pipe, until the weight of the water in the smaller pipe is greater than can be moved by the *momentum* of the water in the main pipe when the latter is suddenly closed. And the first ram was, in fact, as invented by Whitehurst, nothing more than a common hydrant pipe with an upright and smaller pipe and valve, inserted just above the cock, the opening and shutting of the cock, in the ordinary use of the hydrant, operating to supply a reservoir on the top of the inventor's house. Montgolfier's great improvement, which made the machine self-acting, was to substitute an outlet valve, shutting upwards, in place of the cock; which valve was weighted so as just to open when the water in the main pipe was in a state of rest. But the moment the outlet valve was opened by the weight upon it, the water which then rushed out, acquired a power *in addition* to its gravity—*the power of its momentum*—which was sufficient to close the outlet valve, when the same effect was produced that was produced by the shutting of the cock, and a jet of water was thrown upwards into the smaller pipe, which may be called the "raising main." The water in the main pipe was thus brought to a state of rest, when the weight on the outlet valve was again sufficient to open it—and the water rushing out of it created again the *momentum* necessary to close it, when a further supply was forced into the raising main, and so the outlet valve was kept constantly opening and shutting, or pulsating, as it is termed, and a regular stream was made to pass up the raising main. An air vessel was attached to this last, to produce a *uniform* flow of water, like that used in a common forcing pump. But the weight on the outlet valve was an imperfect contri-

vance after all; because, if the head of water varied, the weight required to be varied also, and so long as the weight was the only known method of making the ram self-acting, the machine did not get into very general use, being found oftener on the shelves of philosophical cabinets than in farmers' barn-yards. The improvement of Easton and Amos does away with the weight and makes the hydraulic ram as nearly perfect as any known machine. It consists in placing a small air chamber in the body of the machine, the air in which acts as an elastic cushion, against which the water in the main pipe rebounds when the outlet valve is closed, and thus relieves the valve from the pressure which has closed it, and allows it to open, when the water, escaping at it, again closes it; the rebound again takes place, the valve again opens, only to shut again, and the machine is thus kept steadily at work until the materials of which it is made wear out. A small vacuum valve supplies to the air chamber last mentioned, as well as to the air vessel which makes the flow from the raising main *uniform*, enough air to compensate for that which the water absorbs, besides aiding the opening of the outlet valve by the partial vacuum consequent on the rebound.

I have thus, as clearly as I can without a diagram, described the principle and mode of operation of the hydraulic ram, which is a means of raising water by the agency of two valves, without water wheel or forcing pump—a means unequalled for its simplicity, cheapness, and universal adaptation to all situations where there is a stream of *running* water.

With the ram used by me, I have a head of 30 feet—my main or supply pipe is of iron, two inches in diameter, and one hundred and fifty feet long,—*laid perfectly straight*, the lower end of which, where it is connected with the machine, being of course thirty feet lower than the upper end, to which the water is brought by common chesnut pipes from the rivulet. The raising main is an inch lead pipe three hundred and fifty feet long, and the elevation overcome, or the vertical height between the ram and the basin where the water is discharged, is, as already stated, 150 feet. One-sixth of the water passing through the supply pipe is forced up the raising main—that is, if the rivulet furnishes eighteen gallons of water per minute, I am supplied with three of them at the top of the hill. If it furnishes but eighteen pints, which in this dry season has been much oftener the case, I get three pints. The machine requires no care, no attention, and no oiling or packing. For the effects produced, it is really, to the eye ridiculously small, weighing perhaps 120 or 130 lbs. It is protected from mischief by a suitable covering, and when it is set in motion, which is done by pressing open the outlet valve by putting the foot on the stem, it goes on working day and night, pulsating with the regularity of a time-piece until the valve wears out, when a new valve must be put in its place, and on it will go again. Three outlet valves, I am told and believe, will last for about five years, and a new valve may cost five dollars. The wear of the other valves is imperceptible.*

The quantity thrown up at each pulsation depends upon the play given to the valve, which is regulated by washers upon the stem. When the machine is throwing up a gallon a minute, it makes 60 pulsations with unvarying regularity; and a very simple mechanism would furnish a clock at the engine house as accurate as any that depended upon pendulum or balance wheel for isochronism.

So far as I am aware, the machine at Fairy Knowe is the first that has been put up in this country; and as there are hundreds of situations where it must be most desirable to have it, I have attempted in this long communication to explain its principles and usefulness. The ram itself, without the pipes, cost, all duty and charges paid, $100. The cost of putting one up, must depend of course upon the length of the iron and lead pipes leading to and from it. Two inch iron pipe, laid down, will cost about 45, perhaps 50 cents a foot—and lead pipe, say 20 cents—though this last depends upon the weight of the pipe, which again depends in some degree on the height to be overcome. The labour of ditching and the cost of an engine house or shelter for the ram, depend upon distance and the views of the parties in regard to expense. These estimates are very rough: but should my example induce others to follow it, I would recommend them to John Elgar, Esq., who has made the machine his particular study, and to whose careful and judicious superintendence, I am indebted for saving in time and money in putting the machine to work. Mr. Elgar's address is Sandy Spring, Montgomery county, Md., and he is prepared to furnish accurate estimates, to

* A much less head of water than thirty feet, will answer all purposes. Indeed a ram has been made in England, to raise one hundred hogsheads of water to a perpendicular height of 134 feet in twenty-four hours, with a head of only four and a half feet. The scant supply furnished by my rivulet, was the cause of my using so great a fall as 30 feet.

make the necessary survey of the premises, and to superintend the work. He has made arrangements also to have the machine constructed at the establishment of Mr. Winans, in Baltimore, at much less than it cost me to import mine.

I would omit an act of justice, were I not to mention here, that Mr. Winans has made a very admirable improvement, which enables the machine to be used where the supply of water is irregular, without the trouble of going to it to start it after the head has accumulated, and which promises also to make it useful upon the largest scale, even to the supply of cities, in place of the water-wheel and forcing pump.

Respectfully,

JOHN H. B. LATROBE.

Fairy Knowe, Aug. 2nd, 1844.

From the North American.

Protection from Lightning.

WITHIN the last few years, this subject has acquired renewed interest, in consequence of the immense loss of life and property which has been sustained throughout our country, by this terrific agency. It has, therefore, become a practical question of vast importance, in which we all have a deep concern as to the causes of this destruction, and the best means of counteracting an element so universally diffused throughout space, and which left to itself, proves so highly destructive. To a superficial observer, it must be very manifest that there exists a culpable ignorance on the part of the community, in reference to this whole subject, as well as a general neglect in the employment of those means which, both experience and philosophy have proved adequate for the perfect protection of property, and consequently of human life. From recent investigations, it has been satisfactorily ascertained, that the simple rod of Franklin is all sufficient, if properly made and applied, to secure this requisite protection, and that in all cases, where buildings have been destroyed or much injured, it has been owing either to a neglect of its use, or to some violation of established principles in its construction or application.

No building can be considered secure without a good conductor, and nine-tenths of those now having them, are not much better off, owing to the fact of their faulty construction, their inadequate height and termination, and the very negligent manner of their application. As the conducting power of the rod is greatly influenced by extraneous circumstances, it should be made, not only with great care, but in strict accordance with those principles which experience has proved necessary, in order to attain the highest possible degree of this essential requisite.

The Conductor should be made either of copper or iron:—the first is by far the best, as it is not liable to rust, and possesses eight times the conducting power of the latter; but its very high price operates to exclude it from general use, and causes iron to be preferred, as its moderate cost brings it within the means of every citizen and farmer throughout our city and country.

The Conductor should be of a rounded form—three-quarters to one inch in diameter—the larger, the better security, as the *conducting power is in proportion to the solid mass;* it should be continuous, the bars of which it is composed being well screwed into each other, or nicely adapted, by means of a mortice and tenon joint pinned firmly together, by which the surfaces are brought into the most intimate contact.

The Conductor should be terminated at its superior or upper end, by a stem of copper, capped either with one or more points made of gold, platina, or silver, but of these, the first is the best, as its conducting power is much greater than either of the other metals, and if made solid, or well galvanized, is less liable to rust, a common result in a climate so moist and variable as ours. In addition to this, the rod should be well painted with several coats of black paint, which not only protects it from the moisture, but also tends to increase its conducting power.

As to the application. The efficiency of a conductor is greatly increased by *its height above the building*, and in this particular the greatest possible ignorance prevails, not only in the community at large, but in those who profess to understand this subject, and to furnish the necessary means of protection to others.

It is a common occurrence all over the land, to see large barns and public buildings of great dimensions, say of thirty, forty-five, or sixty feet in extent, protected with a small rod, elevated two or three feet above the chimney or ridge of the roof, an experiment not only dangerous in itself considered, but a useless expense, without securing in any way, the object for which it was applied.

The established rule then is, *That a conductor will protect a space every way, only twice the extent of its height above the building*, and this rule should never be violated in the adaptation of the Conductor; for if it is placed only three feet above the ridge of the roof of a house or barn, say thirty feet in length, it follows of course,

that only *six feet in every direction from its point receives protection*, while the rest of the building is left exposed to almost certain destruction, if struck by lightning under these circumstances, and in this way it can be readily understood why houses having a rod, are frequently destroyed, and the disrepute into which the ordinary means of protection have fallen in many parts of our land.

One conductor is sufficient for almost any sized building, provided its elevation is equally great, but when this is not desirable, two or more placed in different situations should be employed,—particularly if there be several high points or chimneys.

It should be secured to the building by means of iron or wooden stays, embracing necks of glass bottles, rings of horn, or dried wood, through which the rod should be passed,—thereby removing all danger of the lateral discharge, which however, is not great if the rod be perfect, and due attention be paid to facilitate the discharge at its termination into the earth's surface.

The *termination of the rod* should *be into earth permanently moist*, which is found ordinarily at five or eight feet in sandy or gravelly soil. This is of vast importance, and if overlooked, will endanger the building and its inmates, however perfect the conductor may be in its construction and application; much, almost every thing depends on this principle being fairly carried out, the *rod must be inserted into earth permanently moist.*

In order to guard the rod from rust, when passed into the ground, it will be necessary to paint it a number of times with good black paint, and the hole into which it is inserted, should be partially filled up with fine charcoal, such as found in the pen of every housekeeper; as this not only retains moisture for a long time when wet, but likewise counteracts that tendency to rust, which proves so destructive to iron, with a few years exposure in our climate.

With due attention to these directions, and the principles laid down more fully by Professor Olmstead, of New Haven, the community may rest satisfied that there is *almost perfect security* in the *lightning-rod* of *Franklin*, and no reason, whatever, in itself considered, why public confidence should be withdrawn in any degree from this mode of protection, which has been confirmed both by experience and philosophy.

J. M. P.

It is, perhaps, easier to bring up a dozen children correctly, than to reform a single ruined one.

Usefulness of Toads.

In proportion to what he is capable of doing, there is not a more useful animal to man than the toad. He has not bad habits, and in the pursuit of a livelihood he is sure to benefit some body. Yet how often do we find him the victim of an ignorant and cruel prejudice. Naughty children are allowed to torture and kill them through mere wantonness; and the fastidious lady sometimes orders them expelled from her garden, lest her nerves might be disturbed by meeting them in her walk.

The spawn of the toad, like that of the frog, is deposited in the water. As soon as the young have attained the use of their legs, they take to the land, and subsist on such flies, beetles, and worms, as they are able to swallow—thus in obtaining their subsistence, rendering a very essential service to the farmer and gardener. The number of insects in this way destroyed, is immense. As many as fifteen beetles have been found in the stomach of a single toad. It feeds mostly in the night, at which time insects are abroad. It is quite amusing to see the toad seize its prey. In the dusk of evening, it may be seen through the summer season, near the places most frequented by insects, snapping up, almost with the quickness of lightning, every bug or worm that makes its appearance.

In the days of boyhood, we have often amused our friends by the exhibition of a large pet toad. During the day we kept him in a little pen in the shade, covered by a board. At evening we let him out and fed him with "white grubs," "cut-worms," &c., which during the day, had been detected in their depredations on the corn-field. Sometimes when his appetite was keen from twenty-four hours' fasting, we would enjoy the sport of seeing him swallow a big horn-bug or "pinching-bug." And such a *face* as the toad would "*make up!*" But after scratching and straining a little, he would get him down. On one occasion this toad swallowed in rapid succession, *twelve* full grown larvæ of the May-bug, (the "white grub.") This will give some idea of the great benefit which results from the destruction of insects by this animal.

Several years ago, a gentleman advertised in the newspapers for toads to put in his garden, for which he offered a small sum each, and if others would follow his example, and thus induce the boys to save the toads alive instead of killing them, all would be gainers.—*Cultivator.*

Remember that economy and industry are the two great pillars of the farmer's prosperity.

For the Farmers' Cabinet.

Fighting Bees.

In passing through Water street a few days ago, my attention was attracted by seeing a large number of bees flying round an open cellar door, but as these insects often collect in considerable numbers where our wholesale grocers deposit their hogsheads of sugar, molasses, &c., I would probably have passed them without giving the matter further thought; but when I came opposite the cellar, I found the bees were clustering together in numerous parties, from three or four, up to as many as forty or fifty. They were violently agitated, and my first impression was that they were swarming. I stopped to see if the queen bee was among them; but that was not the case, as they were in distinct groups: on closer examination they were found to be engaged in *fighting*, and I soon found there were two classes of bees in the battle; one was the common honey bee, and the other a *smaller bee*, and almost *black*; lacking also, the fringe of hair around the rings of the abdomen, that adorns the honey bee. Perhaps I should rather say the hair was much more sparcely scattered over the body of the smaller bee, than over the honey bee.

The whole incident was so curious and interesting to me, that calling in a friend who has a fondness for natural history, I took some pains to inquire further into the matter.

The bone of contention, we were told by one of the clerks in the store, was a hogshead of honey in the cellar, so we descended into the midst of the combat, to get a fairer view of the whole affair. The hum of the angry combatants was quite enough for weak nerves, but the scene was so interesting that we laid aside *personal* feelings to enjoy it.

The honey bees were evidently the more numerous, but the little *black* bee did not lack spirit, and the battle was *hardly* fought; indeed the clerk above named assured us it was a feud of many days standing. Their mode of attack was curious:—the bees, if in single combat, generally approached face to face, till their antennæ met, when each grasped the other, striving to get such a hold as would enable her to sting her opponent in the thorax, never attempting to inflict a wound in the abdomen. The honey bee seemed to us the best tactician, crouching down, so as to prevent her antagonist getting the advantage of her, while the black bee always stood up, thus giving an advantage to the other, which was improved to the great loss of the black army. If in their struggles they became separated for more than an inch or two, they often could not again find each other, satisfying us of the extreme near-sightedness of vision in the bee.

They fought both singly and in groups, as above stated, though when in clusters they seemed to lack that care and tact observable in single combat.

What kind of a bee was the little black one? Can some of the readers of the Cabinet, who are more curious than myself in such matters, inform us? My friend and I concluded it was a native or wild bee. Were we correct in so thinking? W.

Philadelphia, Eighth mo. 1844.

From the American Agriculturist.

Culture of Coffee.

I HAD almost forgotten the promise I made during our pleasant intercourse at my residence last summer, to give for the Agriculturist a short account of the cultivation of coffee and other products in the northern sections of South America and the province, or rather State of Venezuela. At the time I traversed that country, I did not feel that deep interest in things pertaining to the cultivation of the soil, which would induce minute observation of all that related to the products of the country. My observations were more of a general nature, and were directed to the cultivation of coffee, cocoa, and indigo, as subjects of interest to a traveller, and connected intimately with foreign commerce.

The luxuriance of vegetation in those valleys, which lie between the various branches of that great range of mountains which passes through the South American continent, far surpasses all that we meet with in this country. The valleys of Caraccas and Aragua, consist of a deep, rich, black loam, equal in fertility to the most productive portions of the Mississippi or its tributaries. Throughout these, and on the sides of the adjacent mountains, are the coffee plantations, scattered here and there, small cultivated spots in the immense tract of neglected and uncleared waste. I shall not soon forget my first impressions of a coffee-estate, as I caught sight of it in the distance, or when actually within its precints.

We were on Las Vueltas, or the back of the mountain, and descending by a gently sloping zig-zag mule path, shaded by lofty forest trees on our left, and on our right a steep precipice. Far below this lay the city of Caraccas, as on a map, its spires glittering in the sun, and its surrounding estates

stretching many miles along the beautiful and cultivated valley. On the winding road to the city, were many hundred mules with their burdens, carefully picking their way down the steep sides of the mountains. In the distance was seen the Silla of Caraccas, 10,000 feet above the level of the sea, while all along the valley, the verdure and harvest hues were truly gorgeous. The sugar-cane, the changeable tints of the waving barley, the green maize, the orange groves, and above all, the distant beauty of the coffee plantations, contributed to heighten the effect of a scene to me exceedingly attractive, and one well worthy the pencil of a master hand. Many other things conspired to make my first distant view of a coffee plantation, with its accompanying scenery, very interesting, yet a close inspection was needed to appreciate its beauty.

Just before entering the city of Caraccas, we passed a large and imposing entrance, with a patriotic inscription overhead. Finding it to be a coffee estate, we dismounted from our mules and rambled through it. Imagine an extensive grove of trees, the branches of which, commencing about fifty feet from the ground, formed a large, compact, umbrella-like head, with dark-green, thick, glossy leaves, similar to those of the Cape Jessamine, and covered with brilliant scarlet flowers the size of the hand. These trees called the bucaris, are planted about thirty feet apart, their leafy heads forming a dense canopy impervious to the rays of the sun. The coffee-tree is planted under these about ten feet apart, in straight rows. At two feet from the ground the branches radiate horizontally from the main stem, which is allowed to rise to the height of eight or nine feet, where its growth is stopped by splitting the top, and placing wedges in it, the fruit being better and more abundant where the growth of the tree is thus retarded. The tree was now in its full bloom and ripeness, exhibiting conical forms of about six feet in diameter, with leaves of a glossy green, acuminate, and slightly indented. The fruit grew from the bark about the size and shape of a cranberry. The branches were loaded, like the arms of an oriental beauty, with beads of every tint. Some with the beautiful white flower, similar to our white jessamine, in continuous clusters on the top of the horizontal branches; others with the fruit of every shade, from the palest green to emerald, then the rose, the crimson, and last of all a chocolate-brown, the sign of maturity. When to the refreshing shade and stately appearance of the bucaris, and the graceful foliage of the coffee-tree, are added the exceeding fragrance of the coffee-flower, frequently perfuming the air for half a mile or more, the thick velvety turf beneath them, studded with flowers of the most gorgeous colours, and adorned with little rivulets, deemed necessary to convey moisture to the roots of the plants, nothing can be more beautiful. As I rambled through the rows of coffee-trees entirely protected from the sun, with the velvety turf beneath my feet, and birds of the most brilliant plumage singing sweetly over my head, I thought that no crop or plantation whatever could possibly compare with it in beauty, and that if the cultivation of the soil here on Long Island, was attended with such pleasures, mercantile life would find but few votaries. Nowhere else, however, but in this valley and that of Aragua, did I see the plantations shaded by that beautiful tree, the bucaris. It requires too long a period to obtain the tree of sufficient size for shade. Throughout the West Indies, in Porto Rico, Hayti, Jamaica and Cuba, I observed that they generally planted the banana or plantain on the sunny side of the coffee-tree, to mitigate the heat of the sun by its glossy, pea-green leaves of six to eight feet in length.

When the berry becomes of a chocolate-brown and is quite ripe, it is picked by women or young persons. It is then carried to a platform, which covers sometimes an area of several acres, and is made of plaster and lime, very hard and dry. The berries are then spread out in the sun to dry. After being thus dried, they are placed in a mill similar to a cider-mill, where a heavy wheel passes over them and takes off the husk; it is then cleaned by a common fan, and placed in bags for exportation.

The cultivation is simple, and I see no reason why it could not be advantageously introduced in our Southern states. It flourishes well on the Jamaica mountains, at a height above the sea, where the climate is quite as cold as South Carolina, Georgia, or Louisiana. The labour is very light. The tree when once planted, will bear thirty, and sometimes fifty years, with scarcely any attention. The preparation for market is very simple, and can be performed by children. It would be equally profitable with cotton, and I think far more so than either rice or sugar, without the sacrifice of health attending the cultivation of the former, or the terrible using up of flesh and muscle demanded by the latter. The only point to be ascertained is, whether it will bear the climate of our southern States; if so, there can be little doubt that for productiveness and facility of culture, it will be preferable to any other southern crop. I hope some of

the southern readers of the Agriculturist, may be induced to give the coffee-tree a trial, and report the result. It would be a very valuable advantage to our agricultural productions for home consumption, and as an article of export; the demand abroad is almost unlimited.

There are many articles of foreign produce which can without doubt, be profitably cultivated in this country. We have every variety of soil and climate, and there is no reason why we should resort to other countries to obtain articles for the cultivation of which nature has provided us with abundant resources. Many able articles have recently appeared on the cultivation in this country, of madder, sumach, indigo, &c. I hope the subject may not be given up, but that every possible effort will be made to increase our agricultural wealth by the encouragement and introduction of new products.

S. B. Parsons.

Commercial Garden and Nursery, Flushing, L. I., 11th mo. 23rd, 1843.

Opposite Opinions--Birds.

"Woodman, spare the tree—sportsman spare the birds."

The following sensible remarks are found in the Gardener's Chronicle, and are as applicable here as in the vicinity of London. There is no question at all with us, that the war waged in some places against these "tenants of the air," is quite an injudicious one, and that although at particular seasons of the year, some of them are a real annoyance to the farmer, upon the whole they more than "earn their keep." Nuttall, in his Ornithology, after enumerating the many and varied pleasures derived from their song and their companionship, says, they "associate around our tenements, and defend the various productions of the earth on which we rely for subsistence, from the depredations of myriads of insects, which but for timely riddance by unnumbered birds, would be followed by a general failure and famine." Public economy and utility, as he believes, no less than humanity, plead for the protection of the feathered race.—Ed

The various, and in some instances, contradictory statements of your correspondents, must, in many minds, create a tendency to scepticism; that is to say, where parties do not make practical observations and judge for themselves. One states that salt has produced him magnificent asparagus—another says that salt has destroyed his plants. One advises carcasses as a manure for vine borders; another says they have nearly destroyed his vines. One says that for thirty years he has not suffered from turnip fly, owing to his steeping his seed in oil, and powdering it with sulphur—another says that he has tried it, and still the vermin have marched in military array over his field, perforating and consuming his crop. One says persecute the rook and other birds—another encourages them as your best friends. As great a contrast frequently arises as to the quality of fruits—one stating a particular variety to be excellent—another will not admit it to be second-rate. How are we to reconcile such statements, admitting, as we must, in respect of parties with whom we are unacquainted, that each is entitled to equal credit? In many instances, no doubt, the old aphorism may be applied—"Circumstances alter cases," as with regard to salt and carrion manure; a skilful gardener, knowing the time, and watching the result of his experiment, follows up a perceptible improvement, and counteracts the first appearance of a retrograde movement before the disaster becomes irremediable. In similar cases, the rash or inexperienced fail. With regard to the turnip fly also, there may be some peculiarity of tillage. I have heard of a whole field failing, except where a roller had casually been drawn—in some seasons, that the plants are more liable to attack when the ground is rolled. As to fruit, there can be not the least doubt that soil and aspect, or climate, will produce a much greater difference than exists between the first and second class. But with regard to the rook and birds generally, I think there ought to be but one opinion, namely, that their usefulness very greatly exceeds any injury committed by them, either to the farm or garden. An instance is recorded upwards of a century ago, I believe by Bradley, of the inhabitants of a certain village destroying the whole race of birds in their locality, by setting a price upon their heads; the consequence of which was, that their entire produce was attacked by insects and caterpillars innumerable the following year, and they were glad to offer a similar or greater reward to have fresh colonies brought to their assistance. Dr. Stanley also relates, that a whole district in Germany, was nearly deprived of its corn harvest by having destroyed their rooks. I have myself seen a field of Swedish turnips so infested by grubs, that from three to ten were found under nearly every root that was examined, the turnips having the appearance of warty excrescences, being quite hollow within. An immense flock of rooks, accompanied by a flock of starlings, covering more than acre, alighted upon them, and so busy were they that they would allow a person to go within a few yards of them without flying up. They remained there a whole afternoon, and on examining the turnips afterwards, I

found scarcely one that had not been cleared of the grubs. That piece of ground has been much more productive from that time; and I think at least some share of the improvement is due to the rooks, though certainly not all. As to sparrows and other small birds, particularly wagtails, a careful observer may see them in breeding time following the plough or scarifier, dart their beaks into crevices and pick out the wire worms incessantly, then carry them to a smooth piece of earth, lay them in a bundle, and then clap them firmly in their beak and carry them off to their young. Now suppose the rook in searching for grubs, pulls up the plant with it, would not the vermin have ruined it in all probability if he had not? And allowing that he pulls up some potatoes on the moor lands, a little expense of watching obviates that calamity. Also allowing that sparrows will do considerable damage to the wheat crop from the time the grain is formed until harvested—a period of six weeks or two months—wasting as much as they eat, yet a few old men, for a few shillings per week, may check their depredations over an extensive farm. But by what process, involving fifty times this outlay, could man himself perform the service rendered him by these active labourers, who never need to be called to their employment—are never idle when there is any prospect of their working to advantage—and who never call upon their protector upon a Saturday night. Prejudices often take deep root, and are handed down from ancient to modern times; sparrow clubs are still in existence; and I was informed a few days ago, of a person sending 3,000 heads to a member of one club, and having to send 3,000 more to be exhibited as the genuine trophies of that individual. He also may consider he is doing man a service; but unless I receive further evidence to the contrary, I must continue in the opinion that birds are eminently serviceable to man during at least ten months out of the twelve; that there is no known substitute for their service; and that any injury which they might effect during the rest of the year may be easily and cheaply prevented.—*F. J. Graham.*

Agricultural Meeting.

At a stated meeting of the Philadelphia Society for promoting Agriculture, held on the 4th inst., Dr. James Mease, President, in the chair—present 21 members.

A. L. Kennedy and John Poole, were elected resident members.

A committee consisting of five members, to wit: Dr. Emerson, Dr. Elwyn, Mr. Hulme, Mr. Blight and Mr. Newton, to which was added the president, Dr. Mease,—were appointed to visit the National Convention of Farmers and Gardeners, to be held on the 11th of October next, at the American Institute, New York.

A letter was read from P. A. Browne, Esq., describing the peculiar qualities of a new kind of squash, obtained in Montgomery county, a sample of which was sent to the meeting.

Mr. M. S. Powell, exhibited a fine sample of Tuscany wheat, from the farm of Dr. Uhler, Newcastle county, Delaware—grain large, full and white; a superior article.* A spirited and interesting discussion took place on the subject of ploughs and ploughing, during which various opinions were expressed with regard to the proper mode of turning the furrow, in order to produce the best results. Dr. Emerson stated that he had within a few days, visited the farm of Benj. W. Cooper, near Camden, N. J., in company with Messrs. A. Clement and Hulme, to witness a trial of Prouty's improved Centre-draught ploughs, the performances of which were highly satisfactory. The grass and weeds—the latter of which were from three to four feet high—were completely covered under, and six or seven inches deep; the ground afterward presenting a fine, well broken, clean surface, requiring but little application of the harrow. The soil was a mellow, sandy loam.

The following gentlemen have been appointed judges of stock, implements, &c., at the Exhibition to be held on the 16th, 17th, and 18th of October, at the Rising Sun Village.

On Horses.—Gen. G. Cadwallader, Dr. Elwyn, Owen Sheridan, A. Mellor, Jacob Stadelman.

On Cattle over two years old.—Benjamin Serrill, David George, Thomas S. Woodard, John Worth, jr., Alexander Johnson.

On Cattle under two years old.—Joseph Crawford, William P. Serrill, David Lyons, Lewis Willard, Charles Garrett.

On Sheep and Swine.—Dr. James Mease, Isaac Newton, W. W. Barber, Aaron Johnson, W. W. Roberts.

On Agricultural Implements and Produce.—John C. Cresson, Jesse George, William Roberts, Jonathan Robinson, James Thornton.

* It can be obtained at the Seed store of M. S. Powell, No. 23, Market street.

On Ploughs and Ploughing.—John George, John Hunter, Isaac W. Roberts, Aaron Johnson, John L. Williams.

On Butter.—Joseph Head, Dr. W. Gibson, John Sturdivant.

On Poultry.—Dr. Elwyn, Dr. Emerson, P. Physick.

A. CLEMENT, *Rec. Sec'ry.*

Statistics of Great Britain.

From Mr. Laing's Prize Essay and other authentic sources.

THE united annual income of the people of Great Britain, is estimated from £290,000,000 to £310,000,000. The national debt on the 1st of January, 1843, was £795,000,000, so that a little more than two years and a half income would pay it off.

There have been seventy rail-roads constructed in Great Britain, at an expense of £60,000,000, and extending over a surface of nearly two thousand miles. On these rail-roads, 25,000,000 of passengers were conveyed in 1843, at an average expense of about one penny and three-quarters—not quite four cents—per mile, and with only one fatal accident to a passenger. These railroads pay on an average five per cent. interest on the capital employed; the average cost of construction has been about £34,360 per mile. During the present session of Parliament, sixty-six additional rail-roads have been petitioned for, of which about forty, it is thought, will pass. There are in Great Britain, one hundred and eighty navigable canals, the aggregate length of which is 2682 miles, which have cost upwards of £30,000,000. The London and Birmingham Rail-way gives constant employment to near two thousand persons. It is not generally known that the first rail-way for the conveyance of passengers, was opened in 1821, between Budweis and Linz, in Bohemia. Notwithstanding the immense traffic on rail-ways in Great Britain, the revenue on the turnpike road trusts increased from £1,431,609 in 1834, when, excepting the Liverpool and Manchester, there was scarcely a passenger line in operation, to $1,532,956 in 1839, when most of the principal rail-ways had been opened, being an increase of about seven per cent.; and what is more remarkable is, that the greatest increase was in the counties most intersected by rail-ways.

The number of inhabited houses in Great Britain in 1841, was 3,464,007, nearly double what it was in 1801, and there were in 1841, more than 30,000 additional houses building. The increase of houses was, from 1831 to 1841, two per cent. greater than the increase of population, and this not only through the country generally, but also in large manufacturing towns, such as Leeds and Manchester; Liverpool was one of the few exceptions to this gratifying result.

The amount of British products and manufactures annually exported was, in 1830, £35,000,000; in 1844, £50,000,000.

In 1843, there were consumed 35,127,000 pounds of tea; 22,779,000 pounds of tobacco; 3,825,000 cwts. of sugar; and 39,814,000 bushels of malt.

Mr. Laing states the quantity of British spirits which was consumed in 1843, to have been 35,190,000 gallons; but this must be an error, for the entire amount of British spirits that paid duty for home consumption in 1841, was, according to the Parliamentary papers, only 14,268,453 gallons; this could not have increased one hundred and fifty per cent. in two years. There is also an error with respect to the wine consumed, which Mr. Laing states at 7,000,000 of gallons. In 1841, it was 5,582,385 gallons, and Mr. Porter states that the consumption of wine does not increase with the population, and the quantity of port wine consumed in England in 1842, was 324,660 gallons less than in 1841, or about forty per cent. The Sherry and Spanish wines fell off 64,000 gallons, and the Colonial and Cape wines about nine per cent. The total decrease in all imported wines was 425,812 gallons. Supposing the stock on hand to have been the same in 1841 and 1842, it would make the consumption of 1842 to have been 5,156,573 gallons. This could not have increased to 7,000,000 in 1843.

The consumption of malt liquors of all kinds in 1841, was, in the United Kingdom, 665,750,000 gallons, or about 25½ gallons per head. But although the British are called, and undoubtedly are, "a beer-loving people," they are outdone in this respect by the Belgians, who are represented by one account as consuming 37½ gallons per head annually, and by Mr. McGregor, whose statistical returns may be relied upon, the quantity consumed by each person in Belgium, is stated at 51¼ gallons.

The quantity of soap consumed in Great Britain in 1841, was 170,280,641 pounds. There were 344 licenced makers of soap, and more than one million cwts. of tallow were imported into England for its manufacture and that of candles.

In 1841, the coffee imported into Great Britain was 70,250,000 pounds, being nearly double what it was in 1838; of this amount there was 27,298,322 pounds consumed in Great Britain, or nearly one and a half pounds by each individual. Here again the

British are beaten by the Belgians, for M. Dieteric, in his statistical tables, makes the consumption in Belgium, seven pounds per head. He states the consumption in France, as being one and one-tenth pounds per head, and that in the German League, at two and a third pounds per head.

In 1843, there were in England, 855 marine steamers, with a tonnage of 109,288 tons; in France, 107, with a tonnage of 10,183.

By Lloyd's returns, it appears that the annual loss to the country by shipwreck, is 610 ships, £2,000,000 of property, and 1,500 lives.

The taxes which have been repealed since —in the settlement after the war—1819, may be stated in round numbers at £16,000,000, or £17,000,000 per annum; but the remaining taxes, in consequence of the increase of population and the hitherto prosperous state of the country, produce nearly as great an amount as was formerly raised, with the addition of those which have been repealed.—*National Intelligencer.*

James Gowen's Cattle.

We take from the printed catalogue the following memoranda, in relation to these cattle—they will afford information to some who may not otherways obtain it previous to the time of sale.

No. 1. Walnut; an imported roan, calved seventh month 7th, 1837, by Colossus; should calve to Leander, a son of Dairy Maid, in the first month of next year.

No. 2. Sir Roderick, roan; calved eleventh month 19th, 1843, by Whig—dam Walnut, as above. Whig by the celebrated bull, Sir Thomas Fairfax.

No. 3. Cleopatra, roan; calved fifth month 1st, 1839—dam imported Isabella. Took the premium at the exhibitions in 1841-2-3.

No. 4. Bessy Bell, light roan; calved third month 27th, 1843, by Leander, son of Dairy Maid—dam Cleopatra, as above.

No. 5. Favourite, roan; calved seventh month 30th, 1844, by Colostra, the younger —dam Cleopatra, as above.

No. 6. Victoria, white; calved ninth month, 1839, by Sir Thomas Fairfax; should calve to Leander in the fourth month, next.

No. 7. Daphne, roan; calved tenth mo. 20th, 1840, by imported Colostra: should calve to Leander in second month next.

No. 8. Young Nell, roan; calved twelfth month, 1841, by imported Colostra; should calve to Leander in third month next.

No. 9. Miss Model, roan; calved third month, 1842, by Leander; was served by Colostra, the younger, 26th ult.

No. 10. Julia, roan; calved 15th of seventh month last, by Colostra the younger —dam Miss Model, as above.

No. 11. Fairy, red and white; calved 18th of third month last, by Wellington.

No. 12. Augusta, roan; calved 3rd of eighth month last, by Colostra the younger.

No. 13. Victorina, red; calved 23rd of fourth month, 1842, by Whig; should calve to Colostra the younger, next month.

No. 14. Duchess, light roan; calved first month 15th, 1843, by Leander, son of Dairy Maid; should calve to Colostra the younger, in third month next.

No. 15. Cherry, red with a little white; calved eleventh month 26th, 1842, by Leander; should calve to Colostra the younger, in the second month next.

No. 16. Fair Star, red, with star in the forehead; calved 1st of twelfth month, 1842, by Leander; should calve to Colostra the younger, in second month next.

No. 17. Miss Meadows, red and white; calved twelfth month 23rd, 1842, by Leander; bids fair to make a splendid cow; should calve to Colostra the younger, in third month next.

No. 18. Milk Maid, red and white; calved 7th of first month, 1843, by Leander; gives great promise of fine dairy properties; should calve to Colostra the younger, in second month next.

No. 19. Butter Cup, red and white; calved third month 19th, 1843, by Leander.

No. 20. Miss Dale, red and white; calved eighth month 4th, 1843, by Ned of the Hills.

No. 21. Cauliflower, red and white; calved eleventh month, 1843, by Leander.

No. 22. Fanny, roan; calved eighth mo. 6th, 1840, by Colostra the younger.

No. 23. Rose, red; calved eighth month 11th, 1844, by Leander. Rose is Durham and Hereford.

No. 24. Blossom, white and red; calved third month 25th, 1841, by Leander, son of Dairy Maid—dam Old Butter Cup, the great dairy cow; should calve to Colostra the younger, in second month next.

No. 25. Wood Nymph, red; calved in 1839, by a son of Col. Powell's Wellington; is Durham and Hereford, and is dam to A. Clement's fine heifer, Young Rowan; should calve to Leander in twelfth month next.

No. 26. Lady Milford, red; purchased of William Ward, a reputed judge of cattle, in 1842, when she was four years old; should calve to Leander in eleventh month next.

No. 27. Pizarro, white, red ears; calved

sixth month 12th, 1843, by LEANDER—dam KITTY CLOVER: combines good milking with easy feeding, to a considerable degree.

No. 28. CHORLEY, white; calved 8th of second month last, by COLOSTRA.

No. 29. HENRY CLAY, red and white; calved sixth month 26th, last, by LEANDER: may be relied on for producing stock of great milking properties.

No. 30. LOGAN, white, red ears; calved sixth month 30th, last; full brother to PIZARRO.

No. 31. COLOSTRA the younger, white; calved seventh month, 1841, by Wolbert's imported COLOSTRA.

No. 32. LEANDER, beautiful red and white; calved 1839, got in England, by Whitaker's Prince of Northumberland—dam, imported Dairy Maid. Leander lays claim to the best blood by his sire, while on the other side, through his dam "DAIRY MAID," he takes the highest rank for purity of blood, as it is believed she possesses more of the COMET blood than any animal now living.

No. 33. DAIRY MAID, roan; calved 1835, by HARLSEY; was bred by J. Whitaker, Esq., of Burley, near Otley, Yorkshire. Her milking properties are remarkable, and believed to be unrivalled.* In points, figure, and proportions, she exhibits the very acme of the "Improved Short-horn Durham;" while her pedigree proves her to be derived from the purest and best blood of that stock in Great Britain.

Nos. 34 and 35, are twins; VALENTINE, white; and ORSON, roan; calved 7th month 31st, last, and sired by COLOSTRA the younger.

No. 36. RUBY; Young Devon, of a good milking strain—has had one calf, and was served by COLOSTRA the younger, on the 9th of seventh month last.

For the Farmers' Cabinet.

Unripe Potatoe Seed.

MR. EDITOR,—Conversing with an old countryman, a native of Ireland, on their mode of raising the potatoe, he confirmed by his experience, the opinion expressed by Mr. James Caird, in the article in your last number, p. 21, copied from the Journal of Agriculture,—that the potatoe chosen for seed, should not be perfectly ripe. The old countryman above mentioned, stated that they planted their potatoes for seed, late in the season—too late for maturity—in ground well prepared with an extra quantity of manure, and tended them carefully; the produce was not fit to eat, but was very superior for seed, producing a very abundant and sure crop. Yours, &c. J. R.

* See Farmers' Cabinet, vol. 5, p. 57.

THE FARMERS' CABINET,
AND
AMERICAN HERD-BOOK.

PHILADELPHIA, NINTH MONTH, 1844.

ENQUIRIES are frequently made for the second number of Colman's Agricultural Tour in Europe. It has not yet appeared. The following extract of a letter from him to the editor of the Cultivator, dated London, July 19th, of this year, gives a very good and sufficient reason why it is thus long delayed. "I want, through you," says he, "to assure my friends how much obliged I am by their kind reception of my first Report, and to express my regret that I have not been able as yet, to give them more of the result of my labours. I bespeak their patience. I assure them I am not idle or negligent; and if Heaven spare my life, in due season they shall hear from me as fully as they can desire. I feel it due to them as well as to myself, to make my work as little unworthy of their acceptance as I can possibly render it; but they would not have me recite my lesson before I have learned it. Even a moderate share of self esteem may persuade a man to think his labours of much more importance than they are; but surely in this case, a proper and grateful respect, which I deeply feel for my patrons, should induce me to perform my work as well as I can, and not to give them what would be the result only of crude and partial observation. I cannot fix any definite time for the appearance of my Reports; but I have no doubt of bringing them very nearly within the time of two years, which was assumed for the enterprise."

THE American Institute has called a Convention of "Farmers and Gardeners, and friends of Agriculture throughout the Union," to meet in New York on the 11th prox., to deliberate and promote an interchange of sentiment in relation to matters connected with these great interests. Among other things it is contemplated to solicit government to render more efficient aid to agriculture, by the establishment of a *Home-department*, &c., as was at one time recommended by General Washington. Our Agricultural Society, as will be seen by its minutes, appointed delegates to attend the Convention.

COATES' SEED STORE,

No. 49 *Market Street, Up Stairs:*

FRESH TURNIP SEED,

Of the most approved varieties for Cattle and Table use, with a complete Assortment of

GRASS & GARDEN SEEDS,

Of the finest Quality and best Varieties—Bird Seeds, &c,

JOS. P. H. COATES,

Successor to George M. Coates.

☞ SHORT ADVERTISEMENTS, ☜

The subject matter of which, may correspond with the agricultural character of this paper, will be inserted at the rate of one dollar for each insertion of ten lines or less; and so in proportion for each additional line.

The *Marietta Argus* speaks favourably of a *Grain Drill*, invented by Major Haines and Wells Kilburn, which has been successfully in operation in that neighbourhood. "It is drawn," says the editor, "with ease by two horses—the manager of the Drill stands upon the hind part of the machine, with a handle that reaches from the large wheel in front, by which he is enabled to guide the machine. It sows the seed in drills nine inches apart, and five drills at a time. The seed passes from a hopper or box to the hollow teeth that open the ground, and the seed passing down directly behind, falls in the furrow, and the dirt falling back directly upon the seed, and a roller following, presses the seed in. The depth of the planting can be varied by simply turning a screw. The teeth are fixed in pieces of scantling, which are separate from each other, that they may follow the unevenness of the ground, and so plant the seed at a regular depth in the ground. The machine is so fixed with wooden pins, that if it should happen to strike anything to injure it, the pin breaks, and leaves the machine unhurt—the broken pin can be replaced by a new one in a moment.

"It is quite a simple invention, and is not liable to get out of order;—it can be made by almost any mechanic. We are told by the patentees, that it can be manufactured for the low price of $50."

It has been estimated, we believe, by Judge Tucker, of Virginia, that the productions of our common industry as a nation, were as follow: Agriculture, $654, 387,597—Manufactures, $239,836,224—Commerce, $79, 21,086, and of Mining, $42,358,751, making in the aggregate $1016,303,658. This seems, and indeed is, in reality, an enormous sum. If, however, we suppose our present population to be 20,000,000, we find that it gives but about $50 per annum, for each one to live on.

The reflections which perhaps first present, on acquainting ourselves with these facts, are—how vast and incalculable in amount, are the productions of the earth, and of our own industry—and how comparatively small a part of these, does each one of us, absolutely require for his subsistence!

Particular attention is invited to the sale of James Gowen's stock, advertised by Wolbert & Herkness, auctioneers of this city, to take place on the 26th inst. The character of the owner as a breeder of some of the best Durhams in the country, is well known, and those who would supply themselves or their farms with these splendid cattle, have now an opportunity that is of rare occurrence.

It is announced that George Bancroft, Esq., the historian, will deliver the Address before the New York State Agri ultural Society.

It was mentioned in our last number, that the Fair and Cattle Show of the New York State Agricultural Society, would be held at Poughkeepsie on the 18th and 19th of this month. It may be well further to state, that the 17th will be devoted to the trial of ploughs, and testing the qualities of other new and improved farming implements. The ploughing match will take place on the 19th, the last day of the exhibition. Among the members of the committee on cattle, we notice the names of Levi Lincoln, of Mass., James Gowen, of Philadelphia, H. L. Ellsworth, of Washington, and Dr. Thomson, of Delaware.

John Vicary, of this city, brought to the office about the middle of last month, eight or ten very stout stalks of potatoe oats—they measured six feet four inches in length, and were well filled: they were grown by his brother Philip G. Vicary, in Beaver co., Pa. The yield was estimated at 70 or 80 bushels to the acre.

We keep on hand at this office, and will supply our friends with Agricultural works generally. Among which are

THE FARMER'S ENCYCLOPEDIA, full-bound in leather;—Price	$4 00
YOUATT ON THE HORSE, with J. S. Skinner's very valuable Additions;	2 00
BRIDGEMAN'S GARDENER'S ASSISTANT;	2 00
THE AMERICAN POULTRY BOOK;	37½
THE FARMER'S LAND MEASURER;	37½
DANA'S MUCK MANUAL;	60
Complete sets of the FARMERS' CABINET, half-bound, 8 vols.	6 50
BEVAN on the HONEY BEE,	31½
BUISTS' ROSE MANUAL,	75
SKINNER'S CATTLE DOCTOR,	50
AMERICAN FARRIER,	50
THE FARMER'S MINE,	75
JOHNSTON'S Agricultural Chemistry,	2 25
HANNAM'S Economy of Waste Manures,	25
LIEBIG'S AGRICULTURAL CHEMISTRY,	25
" ANIMAL CHEMISTRY,	25
" FAMILIAR LETTERS,	12½

As well as his larger works on Chemistry and Agriculture.

Subscriptions will be received for Colman's Agricultural Tour in England and on the Continent.

☞ We are prepared to bind books to order.

We are informed by the Recording Secretary of the Philadelphia Society for promoting Agriculture, that a beautiful sample of white wheat was exhibited at a stated meeting held on the 7th ult., by R. T. Potts, which was grown on his farm near Norristown, Montgomery county. A yield of fifty bushels had been produced this season, from two and a half bushels of seed sown, weighing 60 lbs. to the bushel. R. T. Potts stated that he obtained thirteen heads of this wheat from Col. Rayber, of Baltimore, from which the above had been by repeated sowings produced.

The proposal of Aaron Clement, Secretary of the Agricultural Society, as stated in his advertisement, to attend to the purchase and sale of choice stock, will be found a great convenience, particularly to persons at a distance. He was long a practical farmer—is extensively and well acquainted with cattle, sheep, &c., and his judgment may be relied on in these matters.

The Bucks County Agricultural Society at its meeting on the 15th ult.—Dr. Jenks, one of the Vice-presidents in the chair—made the necessary arrangements for the annual exhibition next month.

Agency for the Purchase & Sale of

IMPROVED BREEDS OF CATTLE.

The subscriber takes this method of informing his friends and the public, that he will attend to the purchase and sale of the improved breeds of cattle, sheep, &c., for a reasonable commission. All letters post paid, addressed to him at Philadelphia, will be attended to without delay. AARON CLEMENT.

Sept. 5th, 1844.

POUDRETTE—a valuable manure—of the best quality, prepared in Philadelphia, for sale at the office of the FARMERS' CABINET, No. 50, N. Fourth street, or at the manufactory, near the Penitentiary on Coates' street. Present price, $1 75 per barrel, containing four bushels—$5 for three barrels—$15 for ten barrels, or thirty cents a bushel. Orders from a distance, enclosing the cash, with cost of porterage, will be promptly attended to, by carefully delivering the barrels on board of such conveyance as may be designated. Farmers to the South, and in the interior, both of this State and New Jersey, are invited to try the article. As a manure for turnips, buckwheat, &c., it has been used to great advantage. The season for applying it to the wheat crop, is now at hand. Those who contemplate using it this fall, would do well to secure it early. JOSIAH TATUM.

THE South Western Farmer says that "Mr. Hatch, of Vicksburg, is paying great attention to the nomenclature, or naming of fruits. He expects by another summer to be able to give to each of the fine peaches and nectarines now scattered nameless over our country, their true names. Wherever he cannot determine the real name, he has the fruit drawn, painted and described in full." It is also stated that the painting and description are then forwarded to our Horticultural Society, in order that the true name may be ascertained. No such communication has yet come to hand.

A LIST of premiums to be awarded by our Horticultural Society, at the exhibition to be held on the 18th, 19th, and 20th of this month, was published in the last number of the Cabinet. The Society will occupy the two grand saloons in the Philadelphia Museum, at the corner of Ninth and George streets, and will make them attractive as usual, by having on the ground, arranged in the neatest manner, the richest and the rarest of vegetables, plants and flowers. Competition is open to persons from any section of the Union.

THE potatoes to the eastward, and in some parts of New York, are said to be diseased; short crops in those places will be the result. We have as yet heard no complaint of this kind in this vicinity, though the drought will doubtless affect the late crop unfavourably.

THE quantity of rain which fell during the Eighth month, (August,) 1844, was nearly three inches and a half ..... 3.4 inches.

Penn. Hospital, 9th mo., 2nd.

FROM a statement made in the North American, it appears there are published in this city, six daily subscription papers, and eight daily penny papers. Connected with these dailies, are fourteen semi-weekly and weeklies—there are fourteen secular, and fifteen religious weeklies, making in all, including two printed in German, fifty-nine daily and weekly papers. These, it is said, throw off weekly, about 576,000 sheets, or nearly 30,000,000 annually.

It is not easy to calculate the influence which these periodicals exercise over the public sentiment. But for evil or for good, it is unquestionably very great: and how vastly responsible is the situation of those who wield this mighty engine, and throw abroad daily into the minds of half a million of people the reflection of their own thoughts, and thus mould the public feeling similar to their own.

WE cannot forego the inclination felt to call the attention of our readers to the article of Dr. Swift, on page 58. The suggestions thrown out, are not only exceedingly curious in a speculative point of view, but should they be realised, their practical importance may be found of greater moment than we can readily calculate. We invite the experiments of the agriculturist in relation to this subject: the physiologist too, will not fail to examine it thoroughly. The closely observing, and philosophical mind of the Dr. will, we trust, scrutinize the matter, and favour us with the results. He may be found in Race, between Twelfth and Thirteenth streets.

THE Constitution and Bye-laws of the Cumberland County Agricultural Society, adopted at their first meeting in the Fifth month last, has been kindly forwarded by its President, Frederick Watts. From the list of officers appointed, and the steps taken for the public exhibition at Carlisle, on the 24th of next month, we anticipate satisfactory results. They ask the favourable opinion and zealous aid of all their citizens, in the promotion of the purpose for which they have associated, and we trust they will be cheerfully rendered.

We observe that they avoid the offer of premiums in money. For the best managed farm, for instance, having regard to product, economy in the working, neatness in management, arrangement of barns, cribs, shedding, &c., they propose a survey of the farm, designating each enclosure, marking the contents of each, and locating handsomely on the plot, the different buildings. For the best crop of wheat, not less than 30 bushels to the acre, and not less than five acres, they offer a premium plough, with a certificate of merit. As premiums for other crops,—superior stock, farming implements, &c., they offer agricultural works, or papers, which as we have heretofore suggested, is preferable to the offer of small sums of money.

A FRIEND who has just returned from Bellefonte, Centre co., Pa., informs us that Robert V. Miller, of that place, cut a field of very fine oats this last harvest—he threshed 62 dozens of what he believed to be the average, and they yielded 158 bushels. The crop of oats in Centre, is uncommonly good this year.

Extensive Sale of Durham Cattle.

On Thursday, the 26th of September, at 10 *o'clock,*

At the Exhibition ground of the Philadelphia Agricultural Society, Rising Sun Village, on the Germantown Road, 3 miles from Philadelphia,—will be Sold—A superior lot of *Improved* SHORT HORNS, from the celebrated herd of James Gowen, Esq., of Mount Airy—consisting of young Bulls, Cows, Heifers and Calves, of high blood, imported, or immediately derived from imported animals of great repute.

Also, some fine Young Heifers, from one-half to seven-eighths blood, sired by Leander, Son of Dairy Maid.

Mr. Gowen assures us, that this Sale will, in point of numbers and character, far exceed his Sale of 1842. Leander and Colostra, the younger, will be among the Bulls; and the celebrated Dairy Maid—the beautiful Cleopatra—Walnut and Miss Model, among the Cows to be offered.

☞ Catalogues will be ready in due time, and the Cattle will be on the ground for exhibition two days previous to the Sale.

We invite the special attention of Breeders and the lovers of fine Stock in general, to this splendid selection of Cattle. So excellent an opportunity for procuring fine specimens of the best Durhams, but seldom occurs.

WOLBERT & HERKNESS, Auctioneers.

Agricultural Implement Manufactory,

No. 196, Market street, two doors above Sixth street, and two doors below the Red Lion Hotel;

Where are manufactured and for sale, lower than can be purchased elsewhere, Horse Powers and Threshing Machines, Fanning Mills, Corn Shellers, Straw and Hay Cutters, Horse Rakes, Ploughs, Harrows, Cultivators, Seed Planters, Cheese Presses, Churns, Pumps, and every kind of farming implement generally in use. Also, Beach's Self-sharpening Plough and castings—and Wiley's two-pointed do. Every description of implement made to order, or repaired by experienced workmen, and warranted. Slater's Patent Corn Sheller and Grinder. EDWIN CHANDLER,

Agent for Agricultural Machines of every description.

PHILADELPHIA SEED STORE,

No. 23 MARKET STREET.

M. S. Powell keeps a constant supply of Clover and other Grass Seeds. Field Seeds, consisting of prime Seed wheat, Buckwheat, Millet, Oats, Corn, Rye, &c.

☞ GARDEN AND BIRD SEEDS generally.

July 15th, 1844. tf.

PHILADELPHIA AGRICULTURAL, HORTICULTURAL, AND SEED WAREHOUSE.

No. 194½ Market street, between Fifth and Sixth streets, South side.

For sale as above, at wholesale and retail, a complete assortment of Farming tools, among which may be found *Horse-powers and Threshing Machines, Grain and Seed Fans* of various patterns. *Corn-shellers* in variety. Hay, Straw, and Corn-stalk Cutters, eight different patterns, from $4 50 to $30. Corn-stalk Cutters and Grinders—Churns—Cheese-presses, &c. *Centre-draught Ploughs* of eight sizes. Bill-hooks—Bramble Scythes—Grubbing Hoes—Axes and handles—Hatchets—Potatoe Hooks—complete sets of instruments for making capons.

Garden, Grass, Flower and *Field seeds*, warranted fresh and true to name. D. O. Prouty.

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It is issued on the fifteenth of every month, in numbers of 32 octavo pages each. The subjects will be illustrated by engravings, when they can be appropriately introduced.

Terms.—One dollar per annum, or five dollars for seven copies—*payable in advance.*

All subscriptions must commence at the *beginning* of a volume. Having lately struck off a new edition of one or two of the former numbers, which had become exhausted, we are now able to supply, to a limited extent, any of the back volumes. They may be had at one dollar each, in numbers, or one dollar twenty-five cents half-bound and lettered.

For six dollars paid in advance, a *complete set* of the work will be furnished in numbers, including the ninth volume. The whole can thus readily be forwarded by mail. For twenty-five cents additional, per volume, the work may be obtained neatly *half-bound and lettered.* Copies returned to the office of publication, will also be bound upon the same terms.

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Joseph Rakestraw, Printer.